



Faculdade de Design,
Tecnologia e Comunicação
Universidade Europeia

2020

ISALINE JULIE
WETHLI

KALAIA: BRANDING THROUGH EMERGING TECHNOLOGIES



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Projeto apresentada ao IADE – Universidade Europeia, para
cumprimento dos requisitos necessários à obtenção do grau de
Mestre Design e Publicidade realizada sob a orientação científica do
Doutor Carlo Turri, Professor *do IADE*.

I dedicate this work to those who live with their guts in their hearts.

acknowledgment

I would like to thank first and foremost, my mom, who from a young age always taught me to be a daring human being, who's always supported me along my crazy ideas and showed me the importance to end what I have begun. I am grateful to all my friends who helped me with creation of Kalaia, and; without them none of this would have been possible, Mariana Wanzeller in particular who has showed her support and friendship since the beginning of this journey. I must thank my professor Carlo Turri and professor Fernando Oliveira, for their knowledge and input for the development of this project and for keeping me inspired me throughout this process.

Keywords

branding; augmented reality; advertising; fashion; technology.

abstract

Companies have existed for thousands of years all over the world, however, brands are the personality of a company, and as people, a broad range of personalities can be found, just like brands. The choice and use of the appropriate brand language according to the business's vision, mission and value create the correct perception to its targeted customers. The name, the logo, the colours, the imagery chosen is the face of the brand. This thesis presents how and why to choose appropriate brand language, bringing to it added value, such as understanding why purple is more than mixing red and blue, or why choosing a particular shaped letter is more than a angled line.

Just as brands change, times change as well; it is important to take into consideration the era we live in and the eras your brand will live in, this being longer than its founders. With this in mind, it was important to understand what the technological trends of the decade are, and what to expect as the billboards of tomorrow. Augmented reality was a trend which caught my attention and decided to investigate and implement while projecting creation of the brand.

Considering the objective of creating a fashion brand in a technological era, it was important to conduct case studies of fashion brands, understand brand language and how augmented reality is implemented in their advertisement.

Kalaia, a swimwear brand, I created with the development of this thesis is the ensemble of both theoretical and projection components from this course. Kalaia, selling products made in Portugal, intends to sell more than swimsuits but a lifestyle, for daring, irreverent and adventurous women.

Palavras-chave

branding; realidade aumentada; publicidade, moda, tecnologia.

resumo

Empresas existem há centenas de anos, no entanto, as marcas são a personalidade de uma empresa e, como pessoas, uma grande variedade de personalidades pode ser encontrada em diferentes marcas. A escolha e o uso da linguagem visual apropriada, de acordo com a visão, missão e valores da empresa criam a percepção correta para o público-alvo pretendido. O nome, o logotipo, as cores, as imagens escolhidas são a personalidade que encontramos nas marcas. Esta tese apresenta escolher a linguagem apropriada da marca para lhe acrescentar valor, tal como perceber que o roxo é mais do que a mistura de vermelho e azul ou que uma letra é mais que linhas angulares.

Assim como as marcas mudam, os tempos também e é importante levar em consideração a época em que vivemos e as épocas em que uma marca ir permanecer. Com isso em mente, era importante entender quais são as tendências tecnológicas da década e o que esperar da publicidade de amanhã. A realidade aumentada foi uma tendência que me chamou à atenção e decidi investigar e implementar para a projeção e criação da marca.

Considerando o objetivo de criar uma marca de moda durante uma era tecnológica, era importante realizar estudos de caso de marcas de moda, e compreender a linguagem visual utilizadas assim como a realidade aumentada implementada nas suas publicidades.

Kalaia, uma marca de moda de praia que criei com o desenvolvimento desta tese, é o conjunto de componentes teóricos e práticos deste curso. A Kalaia, que vende produtos fabricados em Portugal, pretende vender mais do que fatos de banho, mas um estilo de vida para mulheres ousadas, e irreverentes.

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LIST OF ACRONYMS

AR- Augmented Reality
B2C – Business to Consumer
CAGR – Compound Annual Growth Rate
CENIT– Centro de Inteligência Têxtil
CNBC - Consumer News and Business Channel
GPS – Global Positioning System
IDC - International Data Corporation
INPI – Instituto Nacional de Propriedade Intelectual
KPI – Key Performance Indicator
MR – Mixed Reality
NASA – National Aeronautics and Space Agency
UI – User Interface
UX – User Experience
TV – Television
VR – Virtual Reality

I. THEORETICAL FRAMEWORK

1. INTRODUCTION

My research begins with an introduction of my objectives, statement question and methodology. I will follow with a theoretical framework introducing branding strategy, including brand DNA, target and positioning, vision, mission, concept, personality and values. Next, I develop brand visuals analyzing their trademarks, naming, tagline, logo, colours, shapes, symbol, typeface, and imagery.

Within the theoretical framework, I will introduce technology trends such as wearable technology, virtual reality, mixed reality with an emphasis in augmented reality (AR) and its leading vendors. In part II, I will firstly explore case studies of beachwear fashion branding in Portugal. Secondly, I will introduce case studies of main international brands in the fashion industry that use augmented reality in their advertisement. The intent behind these case studies is to enable me to answer my statement question:

WHAT ELEMENTS NEED TO BE IMPLEMENTED IN THE CREATION OF A FASHION (BEACHWEAR) BRAND IN THIS DIGITAL ERA?

Part III will be the analysis of the case studies explored in part II and the answer to my statement question. Once the research component of my paper is concluded, I will continue on to part IV, with the project execution. The project execution is the development of a swimwear brand, Kalaia which was created based on all previous body of work. Here we will find in detail its brand language, brand application and special applications, such as the augmented reality campaign. I will finalize the project with my own conclusion drawn from the research, execution and implementation.

1.1. OBJECTIVES

Since my undergraduate degree in Design of Communication and my current completion of my master's degree in Design and Advertising, I wanted to create something I can take from my academic experience and most importantly something I can use for my career.

I aspire to work in something I am truly passionate every day, also enabling me to enjoy life in ways that I might not be able to accomplish considering the wages of the Portuguese market. Due to my creativity, passion for fashion, branding, my creativity, and academic knowledge, I have as objective to create a brand. A brand that is memorable for what it stands for, for what it represents, for the way it looks and for how it's portrayed through its advertising. I want this idea to be more than just an academic project and develop it for personal income.

With the creation of any brand, regardless of its industry, it is important to understand the theme of investigation in depth. Having the opportunity to investigate and create a brand based on the fundamentals of the branding concepts and laws, allow the best chances for success. With this being said, I also intend to understand and research the fashion industry in Portugal in order to evaluate its market plausibility. Since I am a millennial and have grown up with technology literally at my fingertips, this last point is one that I think is important in any creation of a brand. Given that technology is a utensil which is constantly and rapidly growing, I want to research the use of emerging technologies, particularly in branding and advertisement. In this thesis, I intend both with theoretical components and project development, to introduce its methodology and organization, always using the latest resources at my disposal. For this project, with the help of my advisor and my critical thinking, I propose to interpret the research to the best of my abilities.

1.2. METHODOLOGY

According to Tellis (1997), case studies have been used in many different areas of investigation and are designed to showcase participants detailed points using diverse sources of data. It is an ideal methodology when a complete and in-depth investigation is developed (Feagin, Orum, & Sjoberg, 1991).

Considering the purpose and nature of this project, I choose to proceed with case studies as my methodology, not only for their theoretical depth but also for the different possibilities that can be presented as seen below.

Yin (1993) identified three specific types of case studies:

- Exploratory – used as preparations for social research
- Explanatory – used more frequently during causal investigations
- Descriptive – used as descriptive theory to be developed before starting the project or investigation.

Stake (1995) also found three other types of case studies:

- Intrinsic - when the researcher has an interest in the case
- Instrumental - when the case is used to understand more than what is obvious to the observer
- Collective - when a group of cases is studied.

In order to create a brand in the fashion industry, while using a technological trend, it is clear that the type of case studies chosen will firstly be intrinsic since it is of my interest to understand these fields; secondly, the case studies will be descriptive and collective. I intend to collect multiple brands in the fashion industry and reunite data and visual elements regarding what brands are made of. Next, I will collect data regarding fashion brands using new technologies enabling me to find similarities and differences useful in the evaluation of my own brand.

The analysis of a case study is a critical factor to its success. Frequently, its system of action focuses on one or two issues that are fundamental to the cases that are being examined, such as:

1. Design the case study protocol
2. Conduct the case study
3. Analyze case study evidence
4. Develop conclusions, advices or suggestions based evidence

The analysis of the cases studies will be a crucial element in the skeleton of this project determining its different components. For the conclusion, the path is already set, a clear idea of how and where the project has developed.

2. BRANDING

2.1. WHAT IS BRANDING?

According to Martins (2006), a brand is a union of tangible and intangible attributes that, formed in an adequate way, creates influence and value. A brand is more than a product or service; it represents a lifestyle. Here is where the branding component comes into play (Cobra, 2007). In order to build a strong brand, according to Keller (2001), the Customer-Based Brand Equity model can be viewed as a succession of steps: the first one being with brand identification and understanding “Who are you?”, followed by the second step of a brand’s identity of “What are you?” In a cultural context, brands emerge as a value, translating into personalities and personal identity traits, which highlights branding as fundamental (Oliveira, 2015). Brands have financial value due to their representation of beliefs through brand awareness; being the emotional connection they establish with customers, distributors, vendors, influencers, celebrities, opinion leaders. “brand is the set of added perceptions” (Kotler, 2012, p.7,8).

“A representation is a *system* of mental associations. We stress the word ‘system’, for these associations are interconnected. They are in a network, so that acting on one impacts some others. These associations (also called brand image) cover the following aspects:

- What is the brand territory (perceived competence, typical products or services, specific know-how)?
- What is its level of quality (low, middle, premium, luxury)?
- What are its qualities?
- What is its most discriminating quality or benefit (also called perceived positioning)?
- What typical buyer does the brand evoke? What is the brand personality and brand imagery?" (Kapferer, 2012, p.9)

This is what is expressed in the traditional definition of a brand: "A brand is a set of mental associations, held by the consumer, which add to the perceived value of a product or service" (Keller, 1998, p.10).

2.2. BRAND STRATEGY

2.2.1. BRAND DNA

According to Ruão & Farhangmer (2000), the identity of a brand must integrate a set of specific characteristics that differentiates it, this being a result of its story, values, properties, physical appearance, and relation with its public. These integrate tangible and intangible characteristics to brands. The system of a brand's visual identity or its DNA are the visual linguistics of a brand, to which Lupton and Phillips (2001) define as something that originates from the graphics of a brand, such as colours, forms, images, typography, textures, patterns and/or materials. Ollins (1995) makes allusion of basic elements of this system that are defined by its name, symbol, typography and colour. The elements that help this same system are identified as commentary such as imagery, form movement and sound; even if these are not visual elements they allow them into other senses (Oliveira, 2015).

2.2.2. POSITIONING

A concept first applied by Al Ries and Jack Trout in his book in 1980, defines what a brand represents in a client's mind and how it behaves with its competitors.

It's important to focus on what and how the client thinks in order to respond to their needs accordingly. This is what makes branding a bidirectional process (Haeley, 2008). Positioning is creating openings and opportunities in a market that is constantly changing and oversaturated. "Takes advantage of changes in demographics, technology, marketing cycles, consumer trends, and gaps in the market to find new ways of appealing to the public" (Wheeler, 2009, p. 14).

Will Burke, CEO of Brand Engine¹, gives a good example of positioning in the automobile industry: at the time, Henry Ford told his customers that they could choose from any colour, as long as it was black. Then General Motors came along and gave their customers the option of five different colours, and with this move they became leaders in the automobile industry. As Will Burke mentions, if you are unable to say that you are the only one, it's your business' problem, not your brand.

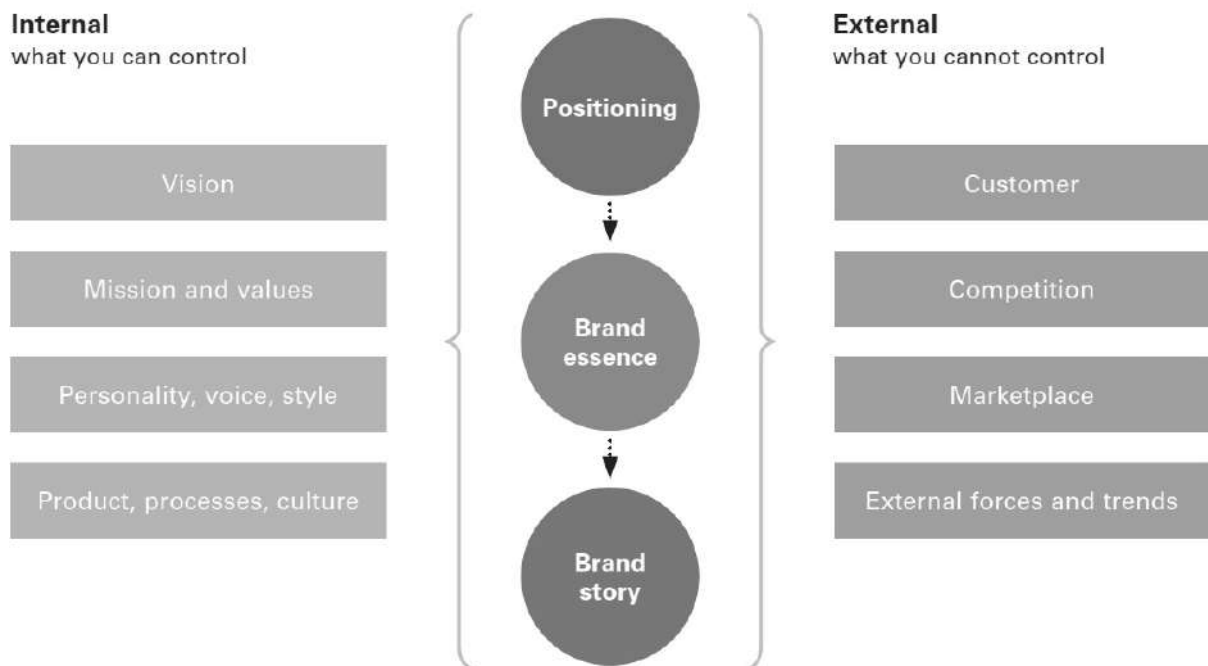


Figure 1 - Brand positioning. Adapted from "Design Brand Identity" by Wheeler, A. (2009).

¹ Brand Engine – Creative agency based in Washington

2.2.3. VISION

“Vision is the ‘What:’ the picture of the future we seek to create.” (Mirvis, Googins, & Kinnicutt, 2010, p.317). As Mirvis & et al. state, the vision is a future desire of a company which can be seen under the form of slogan. When getting to the core of a vision, it should show a brand’s strategy, a direction in the way it wishes to head in the future. The vision is a clear incentive to making goals into a palpable reality. Not only does vision require courage but it creates the possibility for ideas and businesses from people who have the potential to imagine them in different ways and the perseverance to achieve their beliefs. “Behind every successful brand is a passionate individual who inspires others to see the future in a new way” (Wheeler, 2009, p.32).

2.2.4. MISSION

“Mission is the ‘Why:’ the organization’s answer to why we exist.” (Mirvis, et al., 2010, p.317). As Kolowich (2019) mentions, the mission intends to clarify the "why" of a company, being a roadmap to a company’s vision. Many times we can witness the combination of the mission and the vision in one mission statement, explaining why they exist, and what their outlook is. Essentially, a brand’s mission is a short statement with the purpose of a company. Being more than a statement, it is also a guideline both for customers and employees, serving as a company’s strategy and objectives. The mission serves as a strength behind their intended achievements and pursuits. As companies grow, they must always revisit their mission statement, adapting to new goals, new trends, and cultural change Kaferer (2000).

Below we can find some examples of famous brand’s mission statements (Kolowich, 2019, para. 15) :

- “Life is Good - To spread the power of optimism.
- Patagonia - Build the best product, cause no unnecessary harm, use business to inspire and implement solutions to the environmental crisis.

- American Express: We work hard every day to make American Express the world's most respected service brand.
- IKEA: To create a better everyday life for the many people.
- Nordstrom: To give customers the most compelling shopping experience possible.
- JetBlue: To inspire humanity – both in the air and on the ground.
- Tesla: To accelerate the world's transition to sustainable energy.
- TED: Spread ideas
- Ben & Jerry: to have fun and give back to the community”.

2.2.5. VALUES

“Values are the ‘How:’ how we act to achieve our vision” (Mirvis, et al., 2010, p.317).

According to Haeley (2008), in order to accelerate the loyalty one has with its client, being in synchronicity with the correct values is an important aspect to consider. The values are what keeps a brand running. Generally, a brand’s clients have enough sensibility to understand the value of a brand through its behaviour or creators. The core values of a brand must be fundamental for the brand’s resulting in avoidance of superficiality

2.2.6. PERSONALITY

Never overlook the power of personality when thinking about branding. Personality can be the most important reason a brand is chosen over another giving it a face, a voice, an attitude. An enticing personality can lure a customer, creating an emotional link and strengthening the buying decision, making a difference between the choice over several competing brands. A personality will have a client wanting to know more about the brand; the client will then feel the need to be associated to what the brand is representing and selling, owning and becoming the alluring personality (Upshaw, 1995, p. 151).

2.3. BRAND LANGUAGE

2.3.1. TRADEMARK

Trademarks fall into two main categories that can be distinguished by word marks and device marks (Kirby, 1998).

“A brand name is the foundation of a brand's image. While the image associated with a brand's name can be built with advertising over time, brand managers realize that a carefully created and chosen name can bring inherent and immediate value to the brand” (Kohli & Labahn, 1997, p.4).

Examples of brand names are for example Rolls Royce and Coca-Cola.

Device marks are usually referred to as “logos” and an example of Rolls Royce's device mark is “Flying Lady”.

2.3.2. NAMING

Types of names for a brand can be classified usually under the following categories, (Wheeler, 2009):

1. Founder - The first name of an individual, usually taking the name of its founders, like Ford and Philips
2. Descriptive - Descriptive second name of what the business does, like General Motors and US airways.
3. Fabricated - Names that have no meaning but have the intent to sound unique and appealing, like Kodak.
4. Metaphor – Things, places, people, animals, processes, mythological names, or foreign words used to allude to a quality of a company like Puma and Athena.
5. Acronyms - Initials like KLM, IBM and BP
6. Magic Spell – Names that alter a word's spelling, like Netflix or Cingular
7. Combination of the above.

Once a collection of names has been selected regardless of what category it may fall in, there are some criteria that should be followed in order to have a good brand name; these should be (Olins 2008):

- Easy to read
- Easy to pronounce (ideally in most languages)
- Not have negative associations (ideally in most languages)
- Fitting, if the company decides to expand in different sectors
- That it can be registered and protected
- Timeless
- Distinctive
- A name that can have a strong visual association to it
- Charismatic

2.3.3. TAGLINE

“Tagline, or better known as Slogan² is a short phrase that captures a company’s brand essence, personality, and positioning, and distinguishes the company from its competitors and that influences a customer’s buying behaviour” (Wheeler, 2009, p. 36).

Taglines fall into different categories such as:

1. Imperative – Usually begins with a verb and gives an order.
Nike – *Just do it.* Toshiba – *Don’t copy. Lead.*
2. Descriptive – A brand promise which describes its services or products.
Allstate – *You’re in good hands.* Haviland – *Partnership to success.*
3. Superlative – Positioning itself as the best.
DeBeers – *A diamond is forever.* Lufthansa – *There’s no better way to fly.*
4. Provocative – Often a question, with intent of provoking.
Sears – *Where else?* Dairy Council – *Got milk?*

² Slogan – The origin of the word comes from the Gaelic *slaughgairm*, used by Scottish clans which means “war cry”

5. Specific – Evokes a business category.

eBay – *Happy hunting*. The New York Times – *All the news that's fit to print*.

2.3.4. LOGO

The logo is the main identifier of all brands. According to Olins (2008), there are other important elements from which a logo is created such as: colours, typeface, straplines, slogans, tone and expression. The combination of these elements has the intent of presenting the main idea of a brand or organization with impact, brevity and immediacy. Therefore, the logo is what sums up a brand. When creating a logo there are two essential stages to keep in mind: the research and the graphics, as seen in figure 2 (Adir, Adir & Pascu, 2012).

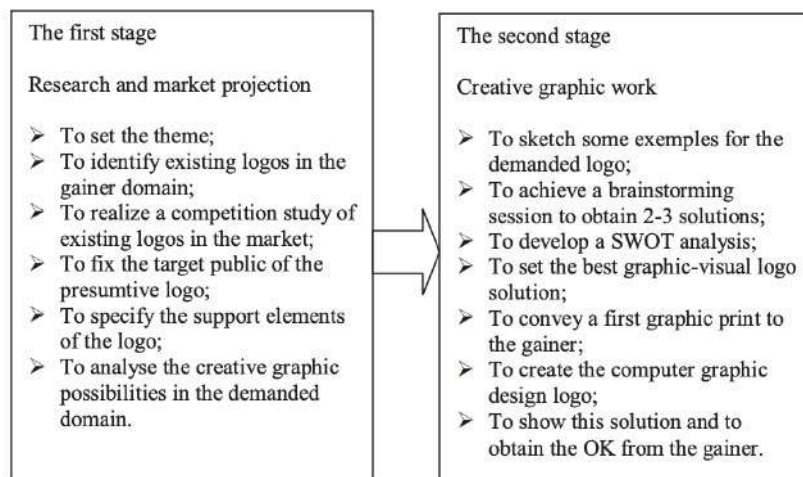


Figure 2- The logo design stages. Adapted from “Logo Design and the corporate identity” by Adîr, G., Adîr, V. & Pascu, E., (2012), retrieved November 20th 2019 from https://www.researchgate.net/publication/278146996_Logo_Design_and_the_Corporate_Identity

2.3.5. SYMBOL

“Symbols are immensely powerful. They act as visual triggers which work many times faster and more explosively than words to set ideas in the mind. Many symbols are, as we know from Jung and others, an intrinsic part of the human vocabulary of expression and comprehension. Symbols can unleash the most complex and profound emotions” (Olins, 2008 p.30,31). The geometric shape chosen as a symbol for its logo is important and must

have the adequate research behind it, to evoke the correct meaning of the brand's intent message to its customer. As seen in figure 3, these are some symbols and their meanings (Adir, Adir & Pascu, 2012).

Geometric shape	Suggestive induction
circle	perfection, balance
square	stability, power
rectangle	duration, progress
ellipse	continue searching
triangle	harmony, urge towards
spiral	advancement, detaching
sphere	perfection, finality
pyramid	integration, convergence
cube	stability, integrity

Figure 3 - Suggestive induction of the shape in a logo design. Adapted from "Logo Design and the corporate identity" by Adir, G., Adir, V. & Pascu, E., (2012), retrieved November 20th 2019 from https://www.researchgate.net/publication/278146996_Logo_Design_and_the_Corporate_Identity

2.3.6. TYPEFACE

"Type is magical. It not only communicates a word's information, but it conveys a subliminal message" (Spiekermann, 2009, p.132). According to Wheeler (2009), many brands are immediately recognized due to their typography, such as Apple, Mercedes-Benz and many others. This is due to a distinctive and consistent style in their typography which are chosen with a purpose depending on what type or family is used; this gives a brand its personality providing a wide range of expression. It is important that the typeface chosen is flexible and easy to use and most importantly that it is clear and legible. Depending on the emotion you want to transmit through your brand, one must consider the different properties of each family type, such as serif, sans serif, weight, curves, rhythm, descenders, ascenders, capitalization, headlines, subheads, text, titles, callouts, captions, bulleted lists, leading, line length, letter spacing, numerals, symbols, and quotation marks.

Here are a few examples of typefaces that were created according to the personality of the brand/organization that were meant to be evoked:

- Matthew Carter designed Bell Gothic to increase legibility in the phone book.
- Wolff Olins designed Tate for Tate Modern in London.
- Frutiger was designed for airport.
- Type trivia the Obama political campaign, used Gotham, designed by Tobias Frere-Jones.

2.3.7. IMAGERY

Brand imagery is the perceptible or imperceptible elements that consumers associate with a brand such as a package, a smell, an event, a feeling, a taste, or so many others. Brand imagery triggers any of your five senses, which can be captured or remembered differently and in unique ways from consumer to consumer. For example, a consumer might associate a brand with a specific package design like the blue Tiffany's box or the red McDonald's French fries' container.

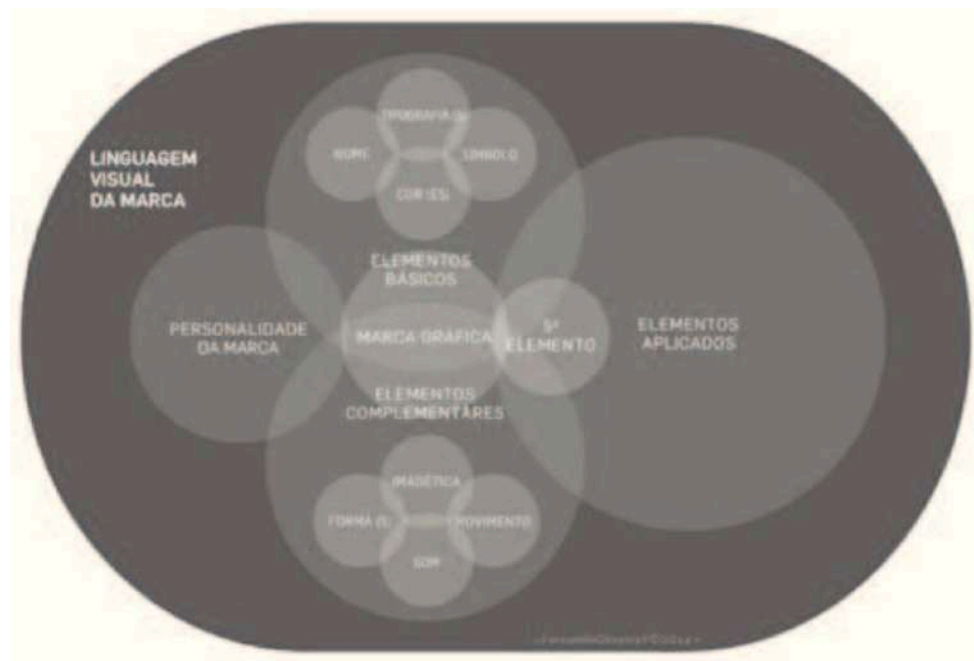


Figure 4 - Linear model presenting the generic element component for a brand language of a brand. Adapted from Languages of visual synthesis in the process of DNA: case studies of Portuguese beachwear brands" y Oliveira, F., Mendonça, J. (2015), retrieved December 3rd 2017, from https://www.academia.edu/35676171/e-Revista_LOGO

3. FASHION AND TEXTILE INDUSTRY IN PORTUGAL

In order to develop a branding project in the fashion industry, it is fundamental to understand the current situation of the market, and its adjacent necessities.

Taking into consideration that we currently live in a global world, it is important to understand what is the volume of European and worldwide imports and exports.

In a first market approach, it was important to understand the positioning of sales, comparing Portugal with the rest of the world in this particular sector.

According to the website Pordata, there has been a general evolution in the percentage of wealth created in production related with trading in foreign countries. The sector of the textile industry is an example of this same evolution, as can be seen in figure 5.

It is also possible to understand in figure 6, how much of the production is sold to foreign countries, by product or service allowing to verify a constant evolution in the particularity of the textile industry as seen in the figure 5; thus, we are able to conclude that the expansion of this evolution will result in a same evolution of demand.

Anos	Total	Produtos da agricultura, silvicultura e pesca	Minérios e outros produtos das indústrias extrativas	Produtos alimentares, bebidas e da indústria do tabaco	Produtos têxteis, vestuário e de couro	Produtos de madeira e de papel, e serviços de impressão	Coque e produtos petrolíferos refinados	Produtos químicos
+ 1995	12,11	3,47	29,65	11,54	47,32	33,71	33,94	29,04
2000	12,80	5,44	17,45	14,42	53,18	36,31	18,73	38,89
2001	12,37	6,65	15,06	13,89	53,95	35,04	15,55	35,61
2002	12,54	7,25	15,97	15,28	53,64	36,87	18,75	37,92
2003	12,70	7,90	16,62	15,60	53,46	37,68	21,32	40,96
2004	12,83	8,57	24,54	15,94	52,00	37,63	20,24	43,88
2005	12,63	8,98	27,63	17,26	50,81	37,21	21,14	45,63
2006	14,38	9,85	40,43	19,50	53,62	39,77	25,98	50,94
2007	14,78	10,60	38,85	21,78	54,33	40,03	23,75	52,57
2008	14,56	12,54	28,31	22,76	56,77	40,28	24,00	52,55
2009	13,02	12,17	37,64	22,41	56,71	42,47	32,50	49,97
2010	14,35	13,25	44,10	23,93	58,57	45,16	33,50	53,44
2011	16,33	13,62	48,22	26,01	61,99	46,43	36,24	56,58
2012	18,08	14,07	57,61	26,86	62,95	49,11	41,47	55,59
2013	19,21	13,56	68,98	28,86	63,84	51,70	51,23	59,93
2014	19,38	15,11	63,33	30,16	64,88	50,90	45,84	61,19
2015	19,61	15,78	61,07	30,10	64,37	51,10	53,75	61,91

Figure 5 - Volume of exportation (in millions). Adapted from “Taxa de cobertura das importações pelas exportações: total e por produto” by Pordata, retrieved November 2017 from pordata, from <https://www.pordata.pt/DB/Portugal/Ambiente+de+Consulta/Tabela>

In order to better understand the impact of the Portuguese textile industry abroad, the study “Têxtil e Vestuário no Contexto Nacional e Internacional Publicação Mensal - Março 2017”, from the Textile Intelligence Center, was analysed. According to the information gathered, from January to February 2017, European exports of textiles and clothing amounted to 28.89 billion euros, representing 3.5% of total merchandise exports. At the global level, from January to November 2016, exports of textiles and clothing at a total of EUR 510.36 billion (based on data available from the CENIT³), corresponding to 4, 4% of total exports. The cumulative value of European textile and clothing exports up to February 2017 grew by 3.3% year-on-year.

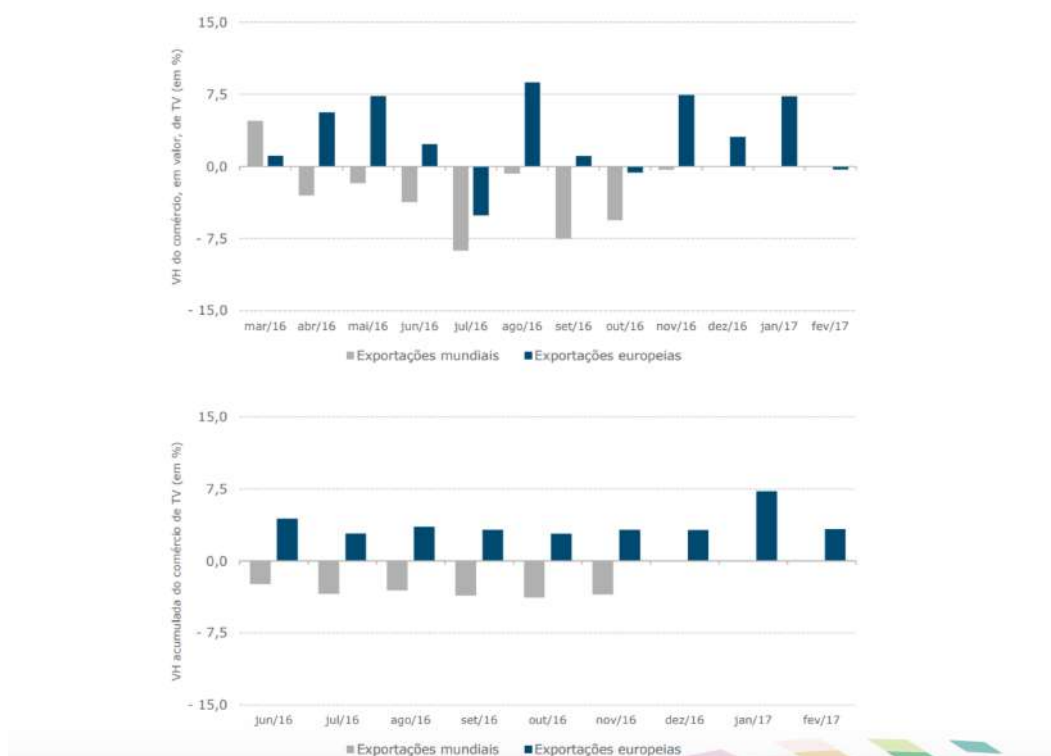


Figure 6 – Dynamic of the textile e clothing industry in the European and global markets. Adapted from “Dinâmica do têxtil e vestuário no comércio mundial e europeu” by CENIT, retrieved November 2017 <https://ec.europa.eu/>

However, it was also considered essential to deepen Portugal’s impact in the textile market exports, finding that it occupies the 9th position in ranking of the largest

³ CENIT - Textile Intelligence Center is a non-profit association whose main entity, establishes itself, as a competence center for “strategic and market intelligence” at the service of the national textile, clothing and fashion sector.

European exporters, with cumulative exports from January to February 2017, in the amount of 867 millions of euros.

Principais exportadores e importadores europeus de têxtil e vestuário

Exportadores					Importadores				
	Jan-Fev/17		Fev/17			Jan-Fev/17		Fev/17	
	M€	VH (%)	M€	VH (%)		M€	VH (%)	M€	VH (%)
Alemanha	5 366	8,8	2 640	1,1	Alemanha	7 531	-0,2	3 640	-5,0
Itália	4 818	1,7	2 470	0,4	França	4 524	-0,9	2 129	-5,9
Espanha	2 589	10,1	1 347	8,7	Reino Unido	4 238	-5,4	1 926	-12,6
Países Baixos	2 373	1,3	1 181	-2,0	Itália	3 896	2,4	1 888	-2,6
França	2 357	0,4	1 165	-4,0	Espanha	3 377	1,6	1 590	-6,7
Bélgica	2 279	4,2	1 102	0,2	Países Baixos	3 084	3,0	1 465	-2,5
Reino Unido	1 809	-2,1	905	-2,7	Bélgica	1 749	-10,7	821	-15,4
Polónia	1 171	-3,7	582	-9,7	Polónia	1 628	6,5	827	1,2
Portugal	867	2,4	424	-0,7	Áustria	1 170	0,0	595	-4,1
Áustria	790	-1,1	393	-6,1	Suécia	917	1,4	438	-6,4
UE28	28 895	3,3	14 474	-0,3	UE28	38 097	-0,1	18 309	-5,6

Fonte: Eurostat

Figure 7 – Ranking of main exports and imports of textile and clothing in the european market. Adapted from “Principais exportadores e importadores europeus de têxtil e vestuário” by CENIT, retrieved November 2017 from <https://ec.europa.eu/>

4. TECHNOLOGY TRENDS

While researching for the theme of this project, Kalaia Swimwear, I knew I wanted to explore new and futuristic technologies in the advertisement field. While investigating on the world wide web, I came across a few recurring ones, the internet being the most accurate and updated tool for this research. The repeated technologies are:

- Wearable technologies
- Virtual Reality (VR)
- Augmented Reality (AR)
- Mix reality (MR)

4.1. WEARABLE TECHNOLOGY

Across a wide variety of industries such as, medical, entertainment, fitness, industrial, gaming, and lifestyle sectors, we can encounter an enormous volume of wearable technology being used. Throughout these industries there are an accountable 431 wearable devices, based on the wearable technologies database (Dehghani et al., 2018).

It is important to take into account the wearable interaction, since these wearable objects will, as clothes and accessories, be worn on the human's body for long periods of time.

Contrarily to smartphones, where they are only used, wearables will be used and worn at the same time and closely to our bodies (Tomico, Hallnäs, Liang, Wensveen, 2017). As seen in figure 8, the most famous brands in wearable technology are Apple watch (41%), Fitbit (35%), Samsung (21%), according to the consumer lot survey conducted by Clutch. The fitness industry takes over 70% of wearable devices.

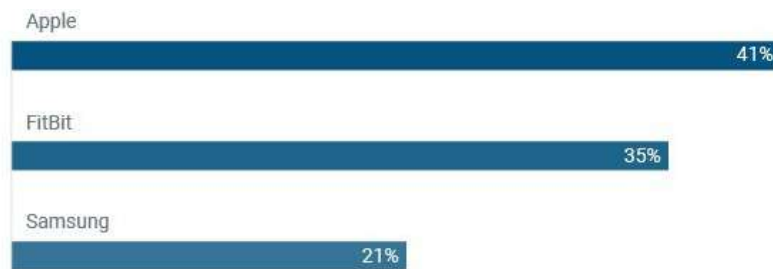


Figure 8 - Top 3 wearable devices survey. Adapted from "Apple Is the Most Popular Brand for Wearables, According to New IoT Consumer Survey" by Clutch (2018), retrieved November 12th 2019 from <https://www.prnewswire.com/news-releases/apple-is-the-most-popular-brand-for-wearables-according-to-new-iot-consumer-survey-300751122.html>

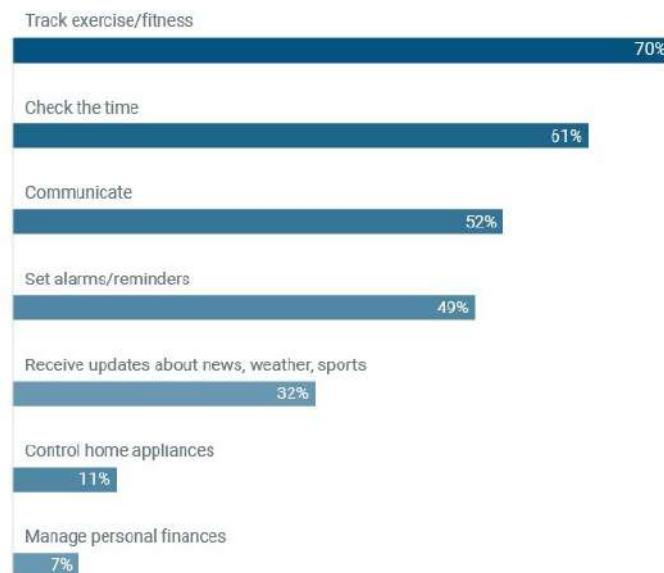


Figure 9 - How people use wearable devices, Adapted from "Apple Is the Most Popular Brand for Wearables, According to New IoT Consumer Survey" by Clutch (2018), retrieved November 12th 2019 from <https://www.prnewswire.com/news-releases/apple-is-the-most-popular-brand-for-wearables-according-to-new-iot-consumer-survey-300751122.html>

The co-founder of a wearable start-up company in Denmark affirms that “I may be a little biased because I'm trying to enter this market, but I believe the smart wearable is here to stay and can only grow. My point is, when the general public will be introduced to a niche market for wearables instead of fitbits and apple watches, we will see exponential growth in different sectors” (Dehghani et al., 2018, p.2).

With this in mind, the forecast for wearable devices worldwide between 2016 to 2021 (in millions of units), figure 10 shows that the biggest growth of all devices will be the head mounted display (Sinha & Gupta, 2018).

Device	2016	2017	2018	2021
Smartwatch	34.80	41.50	48.20	80.96
Head mounted display	16.09	22.01	28.28	67.17
Body-worn camera	0.17	1.05	1.59	5.62
Bluetooth headset	128.50	150.00	168.00	206.00
Wristband	34.97	44.10	48.84	63.86
Sports watch	21.23	21.43	21.65	22.31
Other fitness monitor	30.12	30.28	30.97	58.73
Total	265.88	310.37*	347.53*	504.65*

Figure 10 - Forecast of wearable devices worldwide between 2016 – 2021 (in millions)
<http://web.b.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=1&sid=5e740659-472f-46f1-9980-6da8eadf4184%40sessionmgr103>, withdrawn November 12th.

Further along this research paper, I will take a closer look of one of the most famous wearable devices, being precisely a head mounted display which can be purchased as we read.

4.2. VIRTUAL REALITY (VR)

Most likely, you have heard of virtual reality or known as VR, but what is it really?

VR is the creation of world looking digital graphics, one that responds to the user's input (Burdenea, G. Coiffet, P., 2003).

During the 1970's, the National Aeronautics and Space Agency (NASA) was interested in modern simulation for the practice of astronauts in space. In 1981 NASA created the first prototype based on Heiligi's drawing seen in figure 11. Virtual reality devices, now some days, still use this same principle.

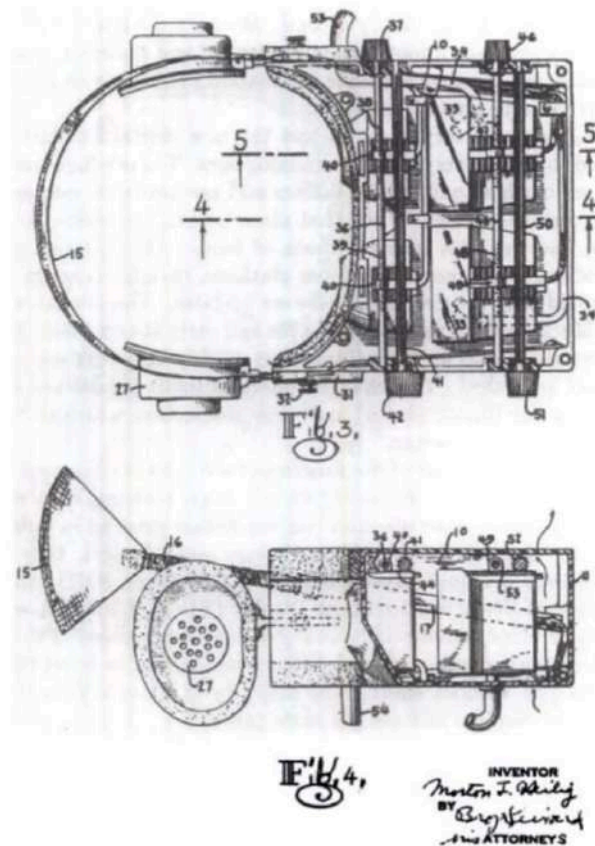


Figure 11- Heiligi's early head-mounted display patent (1960). Adapted from "Virtual Reality Technology" by Burdenea, G. Coiffet, P. (2003).

Virtual Reality targets to enhance our interaction with a digital-generated environment without having to see or interact with real world (Burdenea, G. Coiffet, P.,2003).

A general outlook of virtual reality (VR) is one where the viewer is completely engaged and capable of interacting in a makeshift environment. This environment copies aspects of reality not necessarily actual or current; it can go beyond the physical boundaries ignoring any existing or previous associations' guiding laws of gravity, physics, mechanics, time and space (Milgram, P., Kishino, F., 1994).

4.3. AUGMENTED REALITY

As Craig (2013) mentions, augmented reality will be as big an invention as the internet. So what exactly is augmented reality? It's an experience that the participant engages with in the real world (whether AR is present or not), adding digital information to the real world you are engaging with. Augmented reality is an interactive medium, that uses complex technology in order to provide valuable information in many different fields such as education, marketing, healthcare, public safety, music, advertisement, entertainment and so on. According to Williams and Chiannetta (2016), augmented reality is an enhanced version of reality's views of physical real-world environments. This technology is better known as AR technology.

As portrayed in figure 12, illustrated by Holst (2018), the mobile industry is rapidly growing and smartphone users are predicted to grow to 13.8 billion by 2023. With such current numbers and growth comes the opportunity for advertising to engage through AR technology. This technology will allow brand awareness, but most importantly will be able to be entertained through this recent and upcoming technology (Kiu et al., 2018).

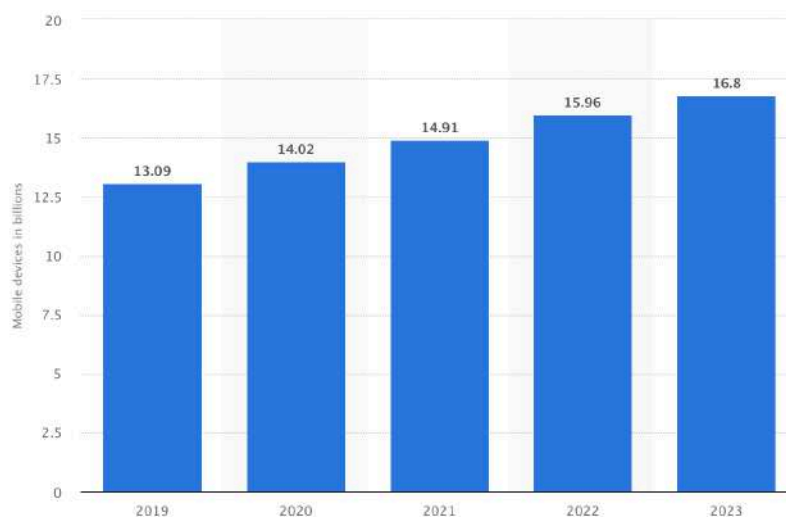


Figure 12 - Forecast number of mobile phone users (in billions), adapted from "Statista" by Holst, A. (2019) from <https://www.statista.com> on visited on November 4th, 2019.

When speaking of AR, “things are enhanced through sounds, graphics and touch feedback. They added AR to create and enhance user experience” (Kiu et al., 2018, p. 1).

Two types of AR exist: marker-based and markerless. Most commonly used are markerless AR; they are either location or position based provided by GPS and embedded in mobile data established on a person’s location. Marker-based AR, uses camera and visual markers (QR code or 2D code) where the reader senses the marker. Distinct and simple patterns are used as markers.

Sensors and cameras are the main components in AR. Sensors are on the outside of the AR device which is used to gather the user’s real-world interactions and communicate them to be processed and interpreted. (Kiu et al., 2018)

4.3.1. IMPLEMENTATION IN THE REAL WORLD

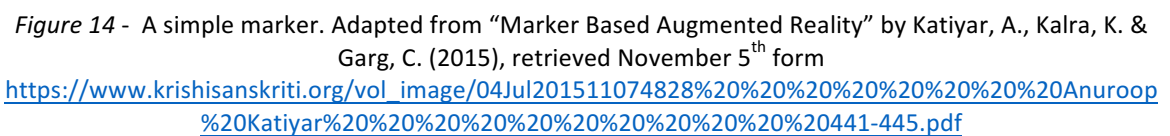
In a simple way, AR uses computer-aided graphics that are able to add a layer through your mobile device that can interact with the physical world around you.

These can be used, as seen previously, through marker-based, markerless, sensor based AR, or GPS/ location based AR. Below we can see some implementations using some of these systems:



Figure 13 – An simulation example of augmented reality. Adapted from “Augmented reality: a different view of learning” by University of Exeter, retrieved November 5th 2019, from <http://blogs.exeter.ac.uk/augmentedreality/blog/2010/09/19/what-is-augmented-reality/>

Markers are images that can be detected by a camera while using a software, placed in front of a scenario. Most of these markers are black and white, but colours can be used as well as long as the colours between them have enough contrast. In figure 14 you can see an example of a marker:



IMMER OFFEN FÜR NEUES.





DA NEUE MINI CABRIO, IMMER OFFER.
 Die Marktsituation des zweiten Halbes 2014 zeigt: Cabrios werden gerne gekauft. Und das ist ein Grund, weshalb wir Ihnen das Beste anbieten: **www.mini.de/angebot** mit drei Modellen und sieben attraktiven Leasing-Angeboten. So ist das Angebot für Sie perfekt.





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4.3.3. MARKERLESS SYSTEM

For marker-less AR, images gathered via the internet are displayed in any specific location found via GPS. A marker isn't required to display the content on the application. It is more of an interactive approach than the marker-based animation (Katiyar et al. 2015).



Figure 16 – Example of a marker-less system. Adapted from “Augmented reality: a different view of learning” by University of Exeter, retrieved November 5th 2019, from <http://blogs.exeter.ac.uk/augmentedreality/blog/2010/09/19/what-is-augmented-reality/>

4.3.3.1. GPS LOCATION BASED AR

High speed wireless networks are accessed via mobile phones and tablets. Content and context are the primary focus. The right information is delivered to the right people at the right time and place. Who remembers Pokemon Go? Perfect example of a location based AR application where people were chasing virtual creatures in odd places, as can be seen in figure 17. Another common application using a GPS location based system are all applications that can show the current star constellation above you as seen in figure 18. This one allows you to move your phone while looking at the sky and while doing so, the user finds new information regarding new constellations depending on the place and time the user is located.



Figure 17 - Example of a GPS based AR system game Sensor. Adapted from “The Pokémon go improved AR+ mode is now on iphone and Android – here’s how to use it” by Harding, X. (2018) retrieved November 7th 2019 from <https://www.mic.com/articles/191915/pokemon-go-improved-ar-mode-iphone-android>



Figure 18 – Example of a common GPS based AR system constellation application. Adapted from “Augmented reality: a different view of learning” by University of Exeter, retrieved November 5th 2019, from <http://blogs.exeter.ac.uk/augmentedreality/blog/2010/09/19/what-is-augmented-reality/>

4.3.3.2. SENSOR BASED AR

Augmented reality based on sensors, as the name indicates, depends entirely on sensors and is more advanced than the markerless technology seen previously.

According to Embitel website (May 2015), the information is processed and sent to the user only when a sensor sends a signal to the mobile device. The mobile application Snapchat, pioneers of this technology, is one of its most famous examples. As seen in figure 19, once the application recognizes your facial coordinates through its sensors then it can apply its AR. The results are endless, your face can be transformed into anything the application is programmed for, as can be seen in figure 20; these are just very few examples of the possibilities that exist on the market currently. Many brands have been sponsoring such technology via applications that use it, such as Snapchat and Instagram.

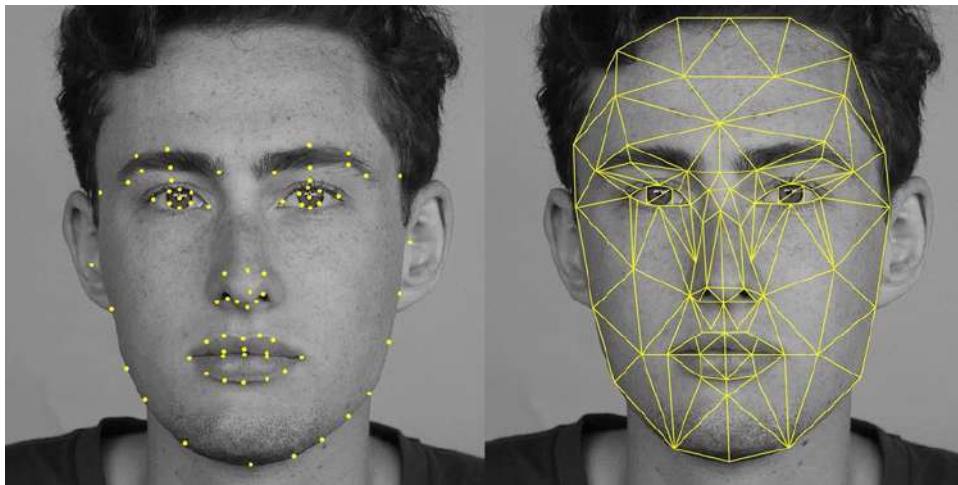


Figure 19 - Sensor based system AR example. Adapted from “Technology Behind Snapchat and Instagram Face Filters” by Elina (2017). Retrieved November 7th 2019 from <https://erminesoft.com/how-snapchat-instagram-face-filters-work/>

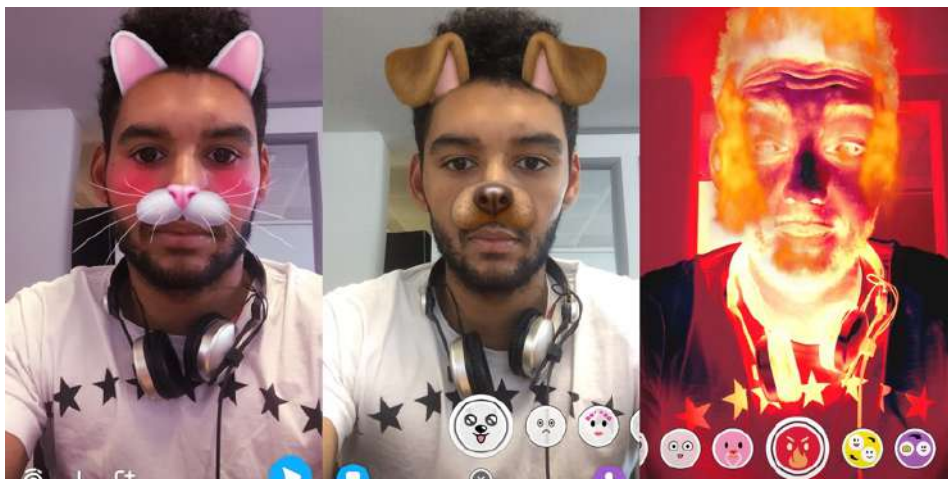


Figure 20 - Example of sensor based AR results. Adapted from “Technology Behind Snapchat and Instagram Face Filters” by Elina (2017). Retrieved November 7th 2019 from <https://erminesoft.com/how-snapchat-instagram-face-filters-work/>

4.3.4. AR IN ADVERTISING

Whether we realize it or not advertisements are constantly all around us, they play a big role in all sorts of businesses' profit and visibility in a very crowded space. The truth is that advertisement has been around since the times of bargaining and has evolved into a multibillion industry since. This is why you can find advertisement from bus stations, billboards, to most frequently, your mobile devices (Kiu, Andrew, Lee, & Chan, 2018).

“Advertising works on a simple phenomenon of buying time and space in mass media or physical places to reach out to targeted group of consumers. Through advertising, businesses can create awareness and aid their consumers in the purchase process and the consumers are able to get knowledge on what the business or brand is all about.” (Kiu, et al., 2018, p.1).

The benefits of AR technology in advertisement are their ability to create an element of surprise that their competitors are yet to achieve. Through the mobile application AR2U, this technology is able to provide customers and users with high quality and exciting advertising content. As seen in figure 21, the use of AR throughout all industries has been rising rapidly, particularly in e-commerce (Kiu et al., 2018). According to a report from Tractica, AR has grown to more than 2.2 billions in the mobile industry.

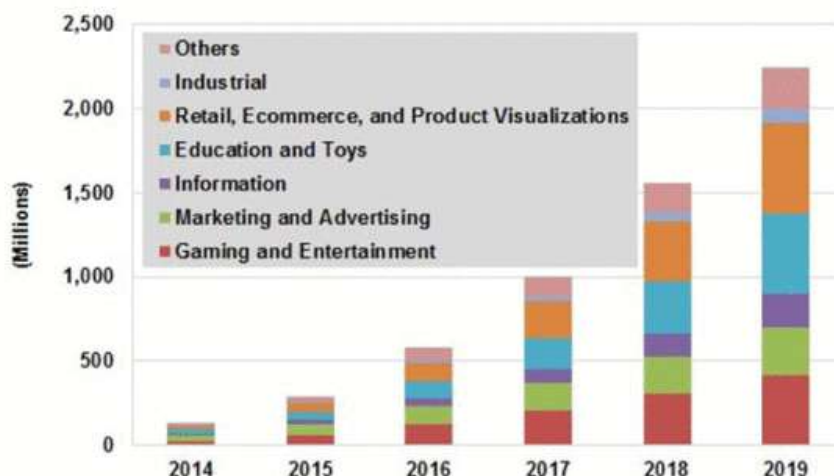


Figure 21 –Growth of Augmented Reality in different industries. Adapted from “Augmented Reality Technology in Digital Advertisement” by Kiu, C., Andrew, K., Lee, W. & Chan, C. Retrieved November 4th 2019 from <https://ieeexplore.ieee.org/document/8776686/authors#authors>

Why AR really works? After a survey conducted by Unruly, 65% of consumers' skip ad and 90% use block ad. However, an observation at the University of California distinguished that as long as the advertisement complemented students' experience without interruption, no blocks were required. "people do not mind ads, as long as it adds to their experience instead of interrupting it (Govindgari & Kumar, 2018).

When comparing traditional advertisement to AR, there are noticeable differences observed. In a UK study withdrawn from Kiu et al. (2018), they used both campaign methods for the marketing of children's construction toy. The results of traditional marketing showed that the parents spent 12 second viewing or interacting with the traditional ad, whereas 83 seconds in the AR ad. Another fact shows that only 47% of the parents considered buying the toy after viewing the traditional ad instead of 74% who view the AR ad. The reason given for these drastic values is due to the interaction the user has with the product. Once the user is able to "touch" and use the product, he is more likely to buy it after having created an emotional connection.

On the other hand, when comparing two emerging industries between AR and VR Tim Merel, the founder of Digital-Captial.com states "VR is big, AR will be bigger (and take longer)".

4.3.5. LEADING AR MOBILE VENDORS

In 2017, Technavio's market study identifies that mobile AR platforms are one of the biggest growing sector in the mobile advertising sector. Their market research analysts estimate a 31% compound annual growth rate (CAGR) by 2021. Thus, leading smartphone brands such as iPhone and Samsung are focusing on integrating software that can support AR platforms and displays. Currently, according to Technavio's market research, the main vendors in the AR industry are Augmented Pixels, HP Reveal and Blippar.

4.3.5.1. AUGMENTED PIXELS

Augmented Pixels is one of the leading AR companies in the world, and regarded as such by the Silicon Valley Business Journal developing products used to increase sales in a variety of business sectors. Their products use real-time simultaneous localization and mapping for mobile phones as well as AR/ VR glasses. They are also in autonomous navigation of drones and robots. They state their advantages are, being accurate in sub-military devices and global localization.

4.3.5.2. HP REVEAL

HP Reveal helps leading brands develop mobile campaigns with measurable results. They state having incredible performances shown with diverse KPI's⁴. The use of AR in branding campaigns show considerably better performances than the average digital and mobile industry. The key factor selling their platform can be seen in their website statement: "we believe good augmented reality is not only memorable, but also measurable".

4.3.5.3. BLIPPAR

After 7 years in the AR business, Blippar has created over 18 000 AR campaigns, applications and experiences, as well as hiring over 50 000 creators on their AR platforms. According to CNBC⁵, they have been one of the most disruptive companies throughout the year 2015 to 2017 also being awarded for their creative and technological team such as writing rules for AR in user experience (UX) and user interaction (UI) as well as making human first and technology second. The agency shows some augmented reality drivers results, stating "AR is at the core of everything they do"

(<https://www.blippar.com/#banners>).

⁴ KPI - A performance indicator or key performance indicator is a type of performance measurement. KPIs evaluate the success of an organization or of a particular activity in which it engages.

⁵ CNBC - the world leader in business news and real-time financial market coverage. Find fast, actionable information.

- 7 years of knowledge
- + 18 000 AR campaigns, apps, experiences
- + 50 000 AR creators on the platform
- 45% higher engagement than TV (Mindshare, 2018)
- 3 mins and 20 seconds average dwell time (Blippar, 2018)
- 72% marketing managers planning to use AR (Purch, 2017)
- 63 awards

4.4. MIX REALITY (MR)

“Mixed reality is a blend of physical and virtual worlds that includes both real and computer-generated objects. The two worlds are "mixed" together to create a realistic environment. A user can navigate this environment and interact with both real and virtual objects. Mixed Reality (MR) combines aspects of virtual reality (VR) and augmented reality (AR)” (Christensson, 2019 p.1).

Mixed Reality vs Augmented Reality

When comparing these two terms, it is important to understand where does MR stands between AR and VR. Between the two, mixed reality is a closer version of augmented reality, because both of them use a real environment while AR, as the name suggests augments reality; as can be seen on the snapchat filters (example as seen in figure 19 and 20) they use reality while overlapping virtual objects above it. However, the user cannot interact directly with these virtual objects. When comparing these two technologies, it is important to understand their main differences; for example, in AR, the user is able to see a virtual 3D box on a physical table and with MR, the user is able to interact with the box such as unwrapping it and opening it up. Another major difference between both is the device being used. In AR, the user only needs a handheld device, a smartphone (with a camera and a screen) whereas in MR, a head-mounted display is required in order to allow the user to interact with its environment, such as the HoloLens.

Even though this technology is still in its early stages, its possibilities are endless, seen across different industries and fields, from construction to engineering. In a near future, it may allow a surgeon to perform surgeries remotely (Christensson, 2019).

HOLOLENS

HoloLens technology is the first unbound MR system aspiring to lead the way to an optimal experience for the consumer as well as the enterprise. (Bekeley et al. 2018)



Figure 22 – HoloLens 2 device. Adapted from “Hololens2” by Microsoft. Retrieved November 12th 2019 from <https://www.microsoft.com/en-us/hololens>



Figure 23 – HoloLens simulation. Adapted from “Hololens2” by Microsoft. Retrieved November 12th 2019 from <https://www.microsoft.com/en-us/hololens>

II. CASE STUDY: FROM BRANDING TO AR ADVERTISING IN THE FASHION INDUSTRY

1. BRAND LANGUAGE OF PORTUGUESE BEACHWEAR BRANDS

I will introduce four Portuguese beachwear brands, as case studies methodology in order to observe and understand the similarities and differences a brand is made of in the fashion industry. I will analyse their brand language, such as logo, typography, colours, imagery, branding voice and sound, being key components for the creation of any brand. These case studies are based on published work from Oliveira and Mendonça (2015).

1.1. CANTÊ

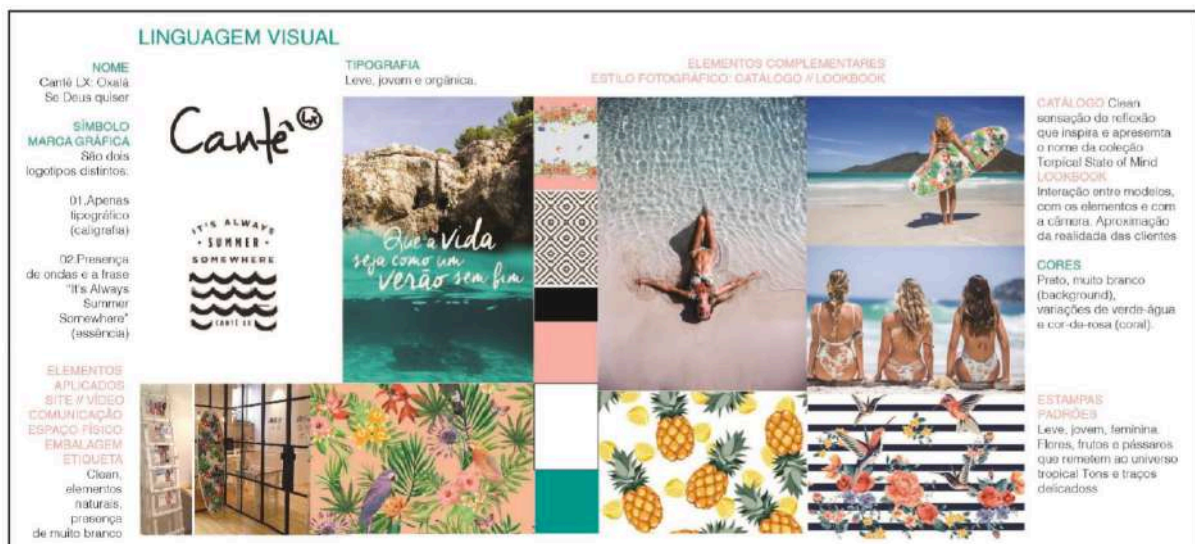


Figure 24 - Cantê's Brand Language. Adapted from "Languages of visual synthesis in the process of DNA-case studies of Portuguese beachwear brands" by Oliveira, F., Mendonça, J., 2015, *Logo*, p.74.

Created in 2011, Cantê is a brand targeting a young romantic feminine audience.

It makes use of elements of delicacy such as bows on most of their products.

The visual language alludes to a french style.

LOGO - We can consider this being a typographic logo, once that it's presented as a typeface only and one that resembles calligraphy, giving the allusion that it was casually written. The circled Lx, the abbreviation for Lisbon, indicating where the brand is from.

TYPOGRAPHY – Throughout their communication, as can be seen in figure 24, a manuscript font is used again giving the illusion of a message of a young and organic summer.

COLOURS – The colours used in the logo are essentially black and white. As for the colours of the imagery, we are presented with tones of blue-greens and coral-pinks, once again re-enforcing the feminine touch. Yellow, orange, red and purple are secondary colours that can be found depending of the time of year.

IMAGERY – A woman and water are always present in their photographs, showing her from behind without direct contact with the camera/user.

BRAND VOICE / SOUND – Presents itself as solid and coherent. The music used in some of their videos' acoustic has an overlaying calm and tender voice speaking from the heart.

1.2. LATITID



Figure 25 - Latitid's Brand language. Adapted from "Languages of visual synthesis in the process of DNA-case studies of Portuguese beachwear brands" by Oliveira, F., Mendonça, J., 2015, *Logo*, p.76.

Launched between 2012 and 2013, Latitid targets demanding and innovative women. They promise to revolutionize the way women wear swimwear. Sophistication can be noticed when observing figure 27, alluring to a classy, sexy young feminine audience coming from a higher social status exuding knowledge and experience.

NAME – Latitud (Latitude) meaning a location which is translated into numbers. The brands play with this and use it in their concept and storytelling.

LOGO – As Cantê, Latitud presents itself with a typographic logo, the letters on the other hand are very geometric, constructed from rectangles, circles and half circles, presenting itself in a very accurate and contemporary way.

TYPOGRAPHY – As seen in figure 25, the tagline is *Find Your L'atitudo*⁹ which use a typeface that is sans serif and very legible.

COLOURS – The main colours observed are orange and gold over white backgrounds with black details, transmitting the warmth of summer; other colours such as dark blue and red give a feel of sophistication as mentioned above.

IMAGERY – The choice of imagery is photographic exuding luxury in modern architectural settings; they choose not to shoot in beach related scenarios, expressing edginess shown through their products. The backgrounds show geometric lines such as seen in their typographic logo.

BRAND VOICE / SOUND – We can hear strong and dynamic pop-rock music in their campaigns showcasing strong personality and confident women.

1.3. PAPUA



Figure 26 - Papua's Brand language. Adapted from "Languages of visual synthesis in the process of DNA-case studies of Portuguese beachwear brands" by Oliveira, F., Mendonça, J., 2015, *Logo*, p.77.C

Created in 2012, the brand presents itself as young and irreverent, exploring exotic beaches, art, and music.

NAME – Undeniably tribal, as the name itself, is retrieved from the country Papua New Guinea, being one of the most tribal and diversified countries in the world.

LOGO – The symbol is geometric and tribal, also seen in the prints of the swimsuits. This geometric shape is also similar to tribal tattoos. We can identify the back of a bikini on the lower part of the symbol, (saying without saying) the representation of a women's buttocks.

TYPOGRAPHY – The typography has bold and geometric lines as seen, once again, in the symbol and cuts of the products.

COLOURS – Black and white are the predominant colours combined with a variety of different other bright colours depending on the tendency of the collection being presented.

IMAGERY – The imagery shows warm colours in ethnical backgrounds, showing a very conceptual feel to it.

BRAND VOICE / SOUND – Contemporary and digital are the characteristics of the sound heard; examples of techno music are used in their campaigns, currently quite trendy.

1.4. VOKE



Figure 27 - Voke's brand language. Adapted from "Languages of visual synthesis in the process of DNA-case studies of Portuguese beachwear brands" by Oliveira, F., Mendonça, J., 2015, *Logo*, p.78.

In 2014, Voke presented themselves as the brand from the beach to the city. They wanted to have a different positioning than other beachwear brands on the market, being daring and fun. They communicate to a bold and sexy woman as showcased in their products seen in figure 27.

NAME – The brand name VOKE is the suffix of the word *provoke* showing an essential element of the brands' DNA.

LOGO – The symbol is typographic, showing two different types of lettering with different line weights as well, again displaying some disruptiveness.

TYPOGRAPHY – The typeface mixes with some of the imagery elements, showing some playfulness. Their communication is modern sans-serif occasionally introducing other typefaces that are a pop.

COLOURS – The main colour, green can be observed throughout the brand, in their logo, website, and communication. Warm colours are also used as secondary.

IMAGERY – The imagery is placed in urban sexy photographic settings, seen in figure 27, barefoot at night in Rio de Janeiro. The women represented are sexy pinup girls, their skin tones are usually tan with voluptuous traits. The backgrounds of the photos of the lookbook, on the other hand, are very simple and plain, giving emphasis to the products.

BRAND VOICE / SOUND – The sounds heard in their campaigns are feminine with youthful and digital characteristics.

2. AR IMPLEMENTATION OF FASHION BRANDS

2.1. NIKE AR TECHNOLOGY USING MARKERLESS SYSTEM IN RETAIL

When speaking of footwear fashion and technology in one sentence, one brand comes to mind, NIKE. Since its beginning, Nike has always been connected with hi-tech using technologies like Nike ID, or the Nike Air technology which influenced most running shoes on the market ever since its innovational discovery of the “supergases” technology.

With this being said, during the year 2019, Nike launched through AR, the possibility to solve a long-time problem in the footwear industry all around the world: shoe size. According to Nike’s data, around 60% of people wear a wrong shoe size. As Nike mentions "Nike Fit is a transformative solution and an industry first, using a digital technology to solve for massive customer friction. It will improve the way Nike designs, manufactures, and sells shoes with product better tailored to match consumer needs. A more accurate fit can contribute to everything from less shipping and fewer returns to better performance" (Herman, 2019, para. 9).

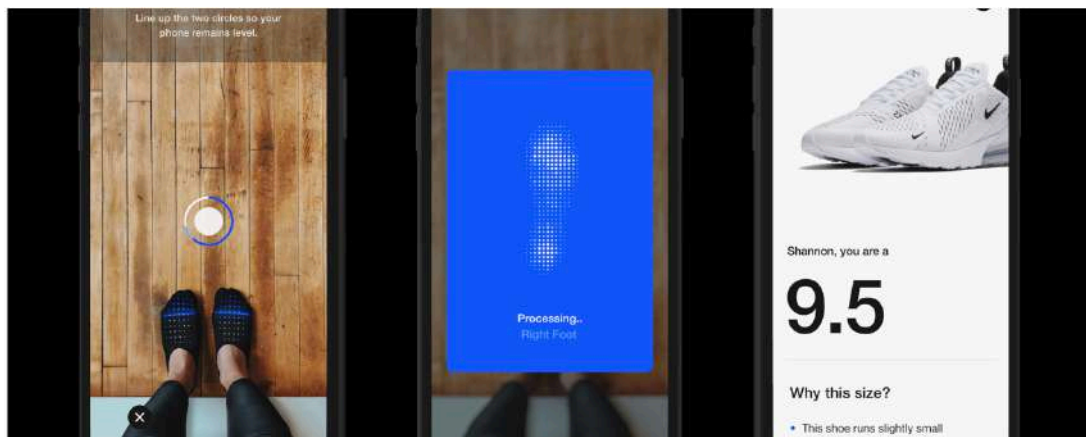


Figure 28 - Nike AR app example. Adapted from “Nike Fit: Using AR to Put Your Best Foot Forward” by Herman, B., 2015, retrieved November 8th from <https://www.rga.com/futurevision/pov/nike-fit-augmented-reality-sizing>

Using a combination of computer vision, data science, machine learning, artificial intelligence and recommendation algorithms, enables them to measure the full shape of both feet. Through the Nike Fit application, this technology collects 13 data points from your mobile device camera in order to map the foot morphology.

As for the scheme creation of Nike's AR brand language, I chose to maintain the same format seen earlier from the beachwear brands. This being a universal and understood scheme, I wanted to maintain coherence between the objects being studied for further analysis. In figure 29, we can observe the visuals as well as the description of Nike's fit main elements.

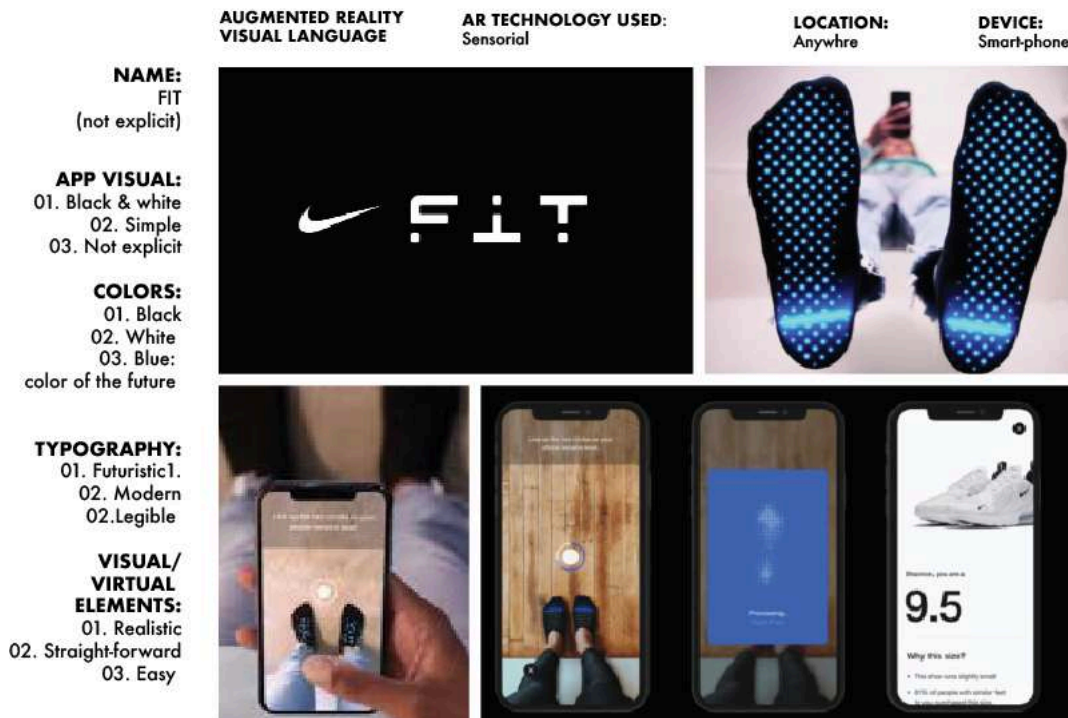


Figure 29 – Nike fit AR Brand Language

2.2. ZARA MARKER-BASED AUGMENTED REALITY TECHNOLOGY IN RETAIL

With the rise of online shopping, such as stores like Amazon, it is undeniable that retail stores have been in decline in the recent years. Their focus has noticeably been on online marketing. However, many top leading brands in the fashion industry have been able to test and experience the benefits of technology, in particular the one of augmented reality to attract customers and ultimately drive sales. Zara, being one of the leading brands in fast-fashion, jumped on the wave of AR advertising. In April of 2018, Zara launched across 120 stores worldwide its first AR campaign. In order to be able to experience this yourself, the Zara AR application “Shop the look”, seen in figure 30, (available for IOS or Android)

needs to be downloaded. Once the application is downloaded the customer has to locate herself in one of the 120 stores.



Figure 30 - Zara AR application backplash. Adapted from “Testing out Zara’s augmented reality experience” by Cosco, A. 2018, retrieved November 8th 2019 from <https://electricrunway.com/testing-out-zaras-augmented-reality-experience/>

For their first campaign, as seen in figure 31, Zara chooses the marker-based system, “EXPERIENCE THE LOOK” located in the window display of the store. Therefore, a customer while walking in front of the store is able to detect the marker-based text through the Zara application allowing him or her to see models walking and posing with the latest looks of the collection. If the customer likes the look being presented through their phone, he or she is able to purchase directly on their mobile devices.

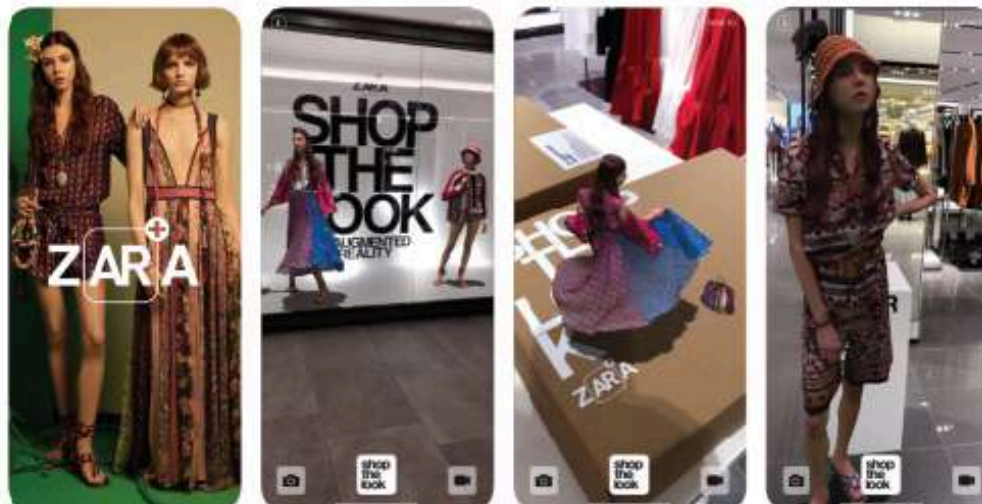


Figure 31 - Zara AR application simulation. Adapted from "Testing out Zara's augmented reality experience" by Cosco, A. 2018, retrieved November 8th 2019 from <https://electricrunway.com/testing-out-zaras-augmented-reality-experience/>

	AUGMENTED REALITY VISUAL LANGUAGE	AR TECHNOLOGY USED: Marker based	LOCATION: In store only	DEVICE: Smart-phone
NAME: ZARA SHOP THE LOOK IN AUGMENTED REALITY (explicit)				
APP VISUAL: 01. Black & white 02. Simple 03. Not explicit				
TYPOGRAPHY: 01. Modern 02. Legible				
VISUAL/VIRTUAL ELEMENTS: 01. Realistic looking models 02. Bold colours 3. Movement				

Figure 32 – Zara AR Brand Language

2.3. NIXI KILLICK'S BRAND LANGUAGE AND AR

2.3.1. BRAND LANGUAGE

After studying the brand language of Portuguese swimwear brands, there is definitely an attraction towards the most daring, bold and sexy evoking brands such as Papua and Voke brands. These brands can relate to Kalaia, the brand that will be seen in detail in the Project section. It was important to understand the different approaches of how fashion brands use the AR technology and their purpose. For this last case study, it was important to transport and develop a brand that has similar products and brand language than the one being developed, but also one that incorporates the AR technology. When taking these aspects into account, NIXI KILLICK is the only brand that shows interest of being showcased.



Figure 33 – Nixi Killick Brand Language

NAME – The brand name NIXI KILLICK is the designer's personal name, used for positioning and notoriety, showing the brand as luxurious, quality and expensive, just as luxury brands like *Louis Vuitton*, *Versace* and *Hugo Boss*.

LOGO – The symbol is typographic, showing colourful gradients. The typography used has strong and futuristic traits. The purple used represents luxury and royalty.

TYPOGRAPHY – The typeface shows digital traits with its bold outlines. Typography is modern and legible.

COLOURS – Purple is the predominant colour representing a higher hierarchy, as used for royalty. Blue is a secondary colour along with warm colours such as orange and pinks also observed in the garments as well as in their communication.

IMAGERY – The imagery is placed in fictional settings of the future. These photographs exude warmth and boldness through their bold and saturated colours. For their lookbooks, the backgrounds are used in plain colours, usually white, showcasing the garments at their best. Models are usually in direct contact with the camera.

BRAND VOICE / SOUND – The brand voice is electronic with underground sonorities.

2.3.2 AUGMENTED REALITY ON FASHION PRINTS

For the AR campaign, Nixi Killick chooses a third party, *EyeJack*, to showcase the augmented reality; the brand itself does not require to develop its own application. As for the augmented reality experience, as seen in the scheme of figure 34, the experience worked in at a launch event of the new collection. Creatively, the users had to place their smart-phone in front of the garments and these would come alive, becoming animated prints. These same prints and animations could be seen on the walls of the event.



Figure 34 – Nixi Killick AR Brand Language

III. DATA ANALYSYS TO THE STATEMENT QUESTION:

**WHAT ELEMENTS NEED TO BE IMPLEMENTED IN THE CREATION OF A FASHION
(BEACHWEAR) BRAND IN THIS DIGITAL ERA?**

In branding, as Lupton and Philips (2001) mention earlier in this paper, the system of a brand's visual language (or its DNA) is the visual linguistics of the brand defined as something that originates from the graphics, such as colours, forms, images, typography, textures, patterns and/or materials. For this specific reason, after studying the previously seen cases of these fashion brands, we can understand that all these sub-sections mentioned are integrated and have a continuity between them. In the Nixi Kilick brand, we can observe that the colours of the brand go all the way from the logo to the prints on the garments.

The purpose is the driving element behind the brand's DNA; as Ollins (1995) defines these basic elements by its imagery, name, typography and colours. These are followed by sound, finalized through their applications and then showcased. We can see a few tendencies that translate into most beachwear brands: the first one being an obvious one, the display of a very revealing woman wearing only the product that is being sold, a swimsuit or a bikini.

Amongst these different brands, we can observe that their brand language adapts depending on what strategy has been put into place for their specific DNA. Also, a re-occurring similarity shows coherence between the different elements of which a brand's DNA is composed of, as mentioned by Ollins (1995).

As previously seen in Voke's case study, we understand that the brand's DNA is disruptive and provocative. Therefore, the elements of the brand show coherence between them. The name Voke (suffix of provoke) and the mix of the logo's typography showcase exactly this same purpose. Along with these elements, the imagery is very bold and sexy. All the other brands use the same elements when creating their image, depending on their values, mission and DNA. Another reoccurring element between these fashion brands is how their concept follows certain tendencies. These tendencies showcase a lifestyle to where branding really comes into play (Cobra, 2007).

Table 1

AR data analysis

Brands	Marker - Based	Markerless	Use of dynamic visuals	User experience	Call to action to shop	Memorable	Useful	Own application
Nike		x			x		x	x
Zara	x		x	x	x	x	x	x
Nixi Killick	x		x	x		x		

Note. This table shows the different characteristics between three fashion brands using AR technology

Whereas the last three case studies integrate augmented reality, we can analyse common aspects between them. The first one being that technology is a common and main element of their brand's DNA. Technology is also present in the brand's vision and where it sees itself in the future, as innovators and trend setter in their industry.

The brand language of their applications is coherent with the brand's DNA. A very obvious example is the ZARA AR application being black and white as the brand's logo itself.

All of the AR applications are currently being used and programmed through smart-phone screens. Considering that the AR technology is relatively new and being improved, we can observe that the usability of the applications presents itself in a straightforward manner, considering it is still a noticeably new technology.

There is a user experience that is lived through these augmented reality applications; the experience is interactive, captivating and innovative. However, there are two main points that differentiates the AR experiences between them (Kiu et al., 2018):

1. How they are triggered
2. The place where the augmented reality happens

As for the Zara and Nixi Killick brand's, the activation is marker based which triggers the AR animation, whereas for Nike, it's a markerless based activation which uses sensors in order to trigger the animation. When comparing the end result of these three AR experiences, the analysis is that some are more useful whereas some are more entertaining. Nike's intention proves to be a more useful one since it provides the accurate shoe size before an online purchase is done right from your living room.

For Zara, it is a combination of both utility and entertainment since you are able to see a live model with the garment you might want to purchase and the model as if you were in a fashion show. However, this one can only be experienced while being located at the store. Lastly the Nixi Killick brand is mostly entertainment since the clothing prints come to life when triggered; they will move for a limited time and can be generated anywhere as long as there is the brand's print in front of you.

I conclude that in order to implement the creation of a fashion brand during this contemporary era, it is important to have coherence between all elements of the brand's DNA. The persona is the colour, and the colour is the sound, the sound is the lifestyle and lifestyle is the garment. In the modern days we live in and technology being on the rise as we speak, it cannot be unnoticed or ignored when creating a fashion brand. For that matter, it is important for a brand to be on trend or trendsetting in that direction: augmented reality applications in advertisement are rapidly gaining popularity by advertisers and users. When creating the application, once again it must be integrated within the brand's image; the user experience is to be straight forward, innovative, and memorable for the customer. As seen earlier, AR can be used anywhere and in a specific place which is an advantage for building creative and contemporary content. Lastly, in order to improve brand longevity these applications can be measured providing valuable data information for future developments.

IV. PROJECT EXECUTION

1. BRANDING STRATEGY

1.1. KALAIA BRAND DNA

1.1.1. TARGET

The main target of Kalaia's Swimwear are B2C (Business-to-consumer):

- Women with ages between 18-34
- Marketing class B+

1.1.2. POSITIONING

The positioning of Kalaia's Swimwear was based on the online statement developed by Marty Neumeier (Wheeler, 2009)

- What: the only swimwear brand
- How: that uses AR as a selling point
- Who: for daring and adventurous women
- Where: mostly in western countries
- Why: who want to show a difference
- When: during an era where we are all followers

1.1.3. VISION

Kalaia's swimwear vision isn't to simply sell swimwear; the brand intends to sell more than a product but a lifestyle, by conquering the heart of bold, adventurous and independent woman around the world.

How is this done? Branding is developed through strong and outspoken communication, showing a summer made of Kalaia's by distinguishing itself from the competitors; women are seen as not scared of taking risks and chasing new challenges, because the most memorable moments of summer are not those we spend on the beach.

Our communication intends to be daring, brimming with an image of young women who dare and who question themselves and society. Our story telling is an important focus; each collection representing a new adventure, always finishing with a teaser "What's next?" aiming to intrigue the next adventure / collection.

1.1.4. MISSION

Our mission is developing and communicating products with personality that live between trends and irreverence: *Only those who go too far, know how far they can go.* The brand is recognized for its daring approach in communication, and for its boldness in adventure. Kalaia Swimwear creates the desire to live in a Kalaia world. It's a brand of bold swimwear that lives, encourages and challenges, experimenting along with new experiences and adventures to develop self-confidence which we believe is critical for the realization of dreams. *Who dares wins.*

1.1.5. PERSONA

She is a young woman in her twenties living in an urban city near the beach. She lives close to new technologies and looks for the most recent trends. She's not afraid to create her own trend nor stand out, even if that means being controversial. She loves anything that shows bold colours, modern art, innovative video content advertisements. She lives with music in her head. She will dare you to wear a short red dress at your wedding. She will choose a freelancer job instead of the 9 to 5 job.

DARING
CONFIDENT
WILD-SPIRIT
RISK-TAKER
ADVENTUROUS
MODERN
TECHNOLOGY
PATIIONATE OUTGOING
FUN
WRECKLESS
SPONTENOUS
GO-GETTER
TRENDY
REBEL
EXPLOSIVE
SMART
SPEAKS-HER-MIND
AMBITIOUS
DREAMER

DNA

ABSOFUCKINLUTELY.

Figure 35 - DNA of the brand laid out into words

1.1.6. VALUES

- Leaving your comfort zone
- Not being limited by 'norms' created by society
- Being defined by actions instead of appearance
- Better going too far than not going far enough



Figure 36 – Kalaia's Swimwear values

1.2. BRAND LANGUAGE

1.2.1. NAMING

Before any brand registration, it is important to know the following: the filing to protect a descriptive mark is when a trademark seeks to identify and distinguish the source of the goods of one party from its competitors (Hodgson, 2014).

If a brand falls in the same Nice ⁶ Classification and the brand's name is phonetically identical or similar, it can result as misleading and confusing the customer.

For this exact reason, during the three-month objection period, the brand name Makaia, was rejected, since a German clothing brand named Makaya exists which falls in the same Nice Classification n°25.

This trademark law was put in place after the famous case of Polaroid v Pollorad (1961) regarding trademark infringement law, which protects brands from being misled.

For all the reasons seen above, the name had to be rethought without disregarding all the important factors and intents in creating a name adequate to its customer.

⁶ The Nice Classification is a system of classifying goods and services for European Union (EU) trade mark applications. It consists of 45 classes. The Nice Classification assigns goods to Classes 1 to 34, and services to Classes

After many hours of researching island names, ethnical names, translations and meanings, the best ones were written on a word document, as seen in figure 37. Once these were selected, a meticulous search was made on the INPI (The National Industrial Property Institute), website for any trademark law infringement.

Kaikara	Wekaia	MIKAIA	KANKI
Kalika	Kawiki	Makaia KAE	IZWI
Mohini			MASUYO
Sayama	Wakaya	MOIKAIA	WAKANA MAKOTO
Sakala	Wakala	MOKAIA	MAKANA
Masaya	KIOA	MAKAIRA	FILWE
	Mali Kaia	OKAOA	AWHINA
			EKUA
Makaila	KAWAU	DAKAIA	SUMATI
Isaia	MANIHIKI	LAKAIA	KEALOGA (THE LOVED ONE)
Nakaia	M-KAIA	WAKAIA	KEALA (THE PATH)
Qaia	MAGUSAI	HAKAIA	KAHINA
	MAGUKAI		KAIMANA
MaiKaia	AKAIA	LAKAIA	KALIOPE
Mykaia	SIKAIA	BKAIA	
Seminiak	SAKAIA	MAKIRA	KALINI
Moykaia	SOKAIA	MAKAHAIA	KALEA
	MOKAIA	KAIA	KILIKINA
Pakaya	WIKAIA	MAKIAI	MELIKA
	PAKAIA	MAKA	KEAHI
Mekala	XAKAIA	KAMELI	KAWEHU
Skala	DIKAIA	KOIGA	KAYIN
			MALAI
Malakala	DAKAIA		Mawaa Kae
Kailila	DAKALA		Kilauea
	WEEZA		

Figure 37 – Draft of possible brand names.

Once the preferred names were cleared and developed, a peer review was made and a final choice was then selected: KALAIA, falling under the metaphor category of names seen earlier by Wheeler (2009).

KALAIA originates from the word KALAIO a Hawaiian meaning of “Your mark in the world”. With this in mind, it was changed to Kalaia being your feminine mark in the world. Therefore, both the phonetic field is clearly in evidence since the word originates from a tropical island and a strong meaning behind the name as well. This resulted in a second name registration at INPI with no objection.

MARCA NACIONAL Nº 575383

Síntese do Processo

Nº do Pedido	2000268905
Data de Apresentação	03-01-2017
Data do Pedido	01-03-2017
Tipo de Modalidade	NÃO APLICÁVEL A ESTA MODALIDADE
Fase Actual	PEDIDO-AGUARDA OPOSIÇÃO
Data de Início da Fase	14-03-2017
Data de Fim Previsto	15-05-2017
Situação de Taxas	PAGAMENTO NÃO-APLICÁVEL
Data de Início da Sit.	03-01-2017
Data de Fim Previsto da Sit.	---
Taxas Pagas	0
Taxas Devidas	0
Data da Última DIU	---
BPI 1ª Publicação	18-01-2017
Data do Despacho	---
BPI do Despacho	---
Data de Início de Vigência	---
Data Limite de Vigência	---
Titulares	ISALINE JULIE WETHLI
Mandatário	---
Classificação de Nice	25
Processo em Tribunal	NÃO
Tribunal	---
Data de Envio	---



KALAIA
Tipo de Sinal: MISTO

Figure 38– INPI Registration of Kalaia

1.2.2. TAGLINE

The tagline “What’s next?” falls into the provocative category as seen by Wheeler (2009). The tagline evokes curiosity of what the next adventure will be, or what might be the next dare or unexpected event created by the brand.



Figure 39 – Tagline used for all of Kalaia’s communication.

1.2.3. LOGO

KALAIA

Figure 40 – Kalaia's logo

1.2.4. SYMBOL

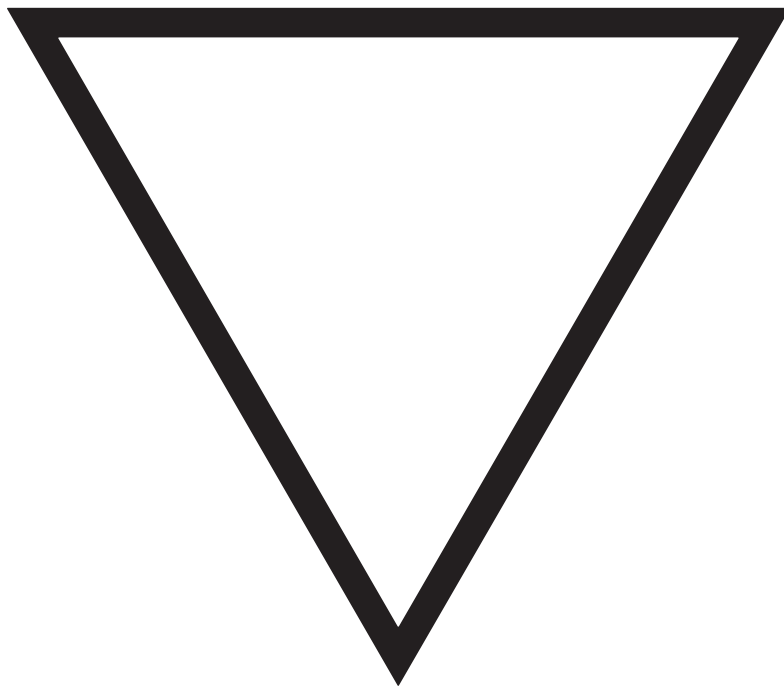


Figure 41 – Kalaia's symbol

The meaning of the triangle, according to Dimurlo (2001), is important to understand in order to discern its choice as the logo's symbol. The triangle is one of the oldest and most widely used symbols, used in many different cultures such as the Celtics and the Greeks. Different meanings can be interpreted depending on its orientation. The inverted triangle has many powerful explanations, reason why it was chosen as the symbol of Kalaia's brand.

- Pointing downwards, it represents the sexual nature of the female,
- Water.
- Symbolizes unity through the strength of working.
- Symbolizes the achievement of chasing dreams and ambitions.
- Lastly, the shape itself is the shape of the bottom of a bikini, representing the product that the brand intends to sell.

1.2.5. COLOUR VERSION

There are no solid colour versions, the only colour version that can be seen of Kalaia's logo is the one in figure 42, which is the cut out of the image seen in figure 43.



Figure 42 – Kalaia's colour version

Here is an explanation behind the logo's colour version and the image behind the logo of figure 42:

When experimenting with the creation of the logo, I found this photograph in google images, as seen in figure 43. I thought this photograph just represented the brand so well, with its dynamic movements, the vibrant colours with a touch of daring black in the background.

Once testing the name and the symbol, I knew this had to be the visual of Kalaia's brand. After a few email exchanges and research to understand who was the author of this piece of work, I discovered the photographer was Mark Dawson from the UK. The digital picture with full resolution was for sale for 2000 euros on Getty images⁷; he offered to sell it for 1000 euros. Being a student with not many resources to start a brand, let alone to pay that amount, I explained to Mr. Dawson that I could only afford 150€ and for that price I would be willing to pay only for the cut-outs of the logo, I also assured him that, when the brand succeeds, I would pay the rest of the price. To my surprise Mr. Dawson agreed to sell the entirety of the photograph for 150€.



Figure 43 – Photograph by Mark Dawson

⁷ Getty images – Bank image website

1.2.6. MONOCHROMATIC VERSION



Figure 44 - logo in monochromatic version with white background



Figure 45 - logo in monochromatic version with black background

1.2.7. FUTURE BEHAVIOR POSSIBILITIES OF THE LOGO



1.2.8. SYMBOL CONSTRUCTION GRID

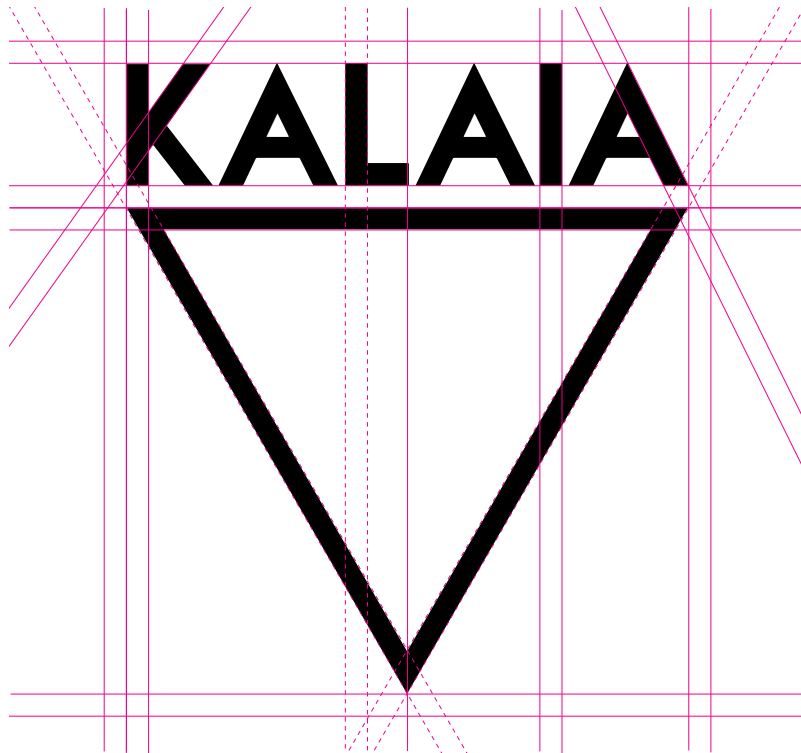


Figure 46 – Logo construction grid

1.2.9. CLEAR MINIMUM SIZES

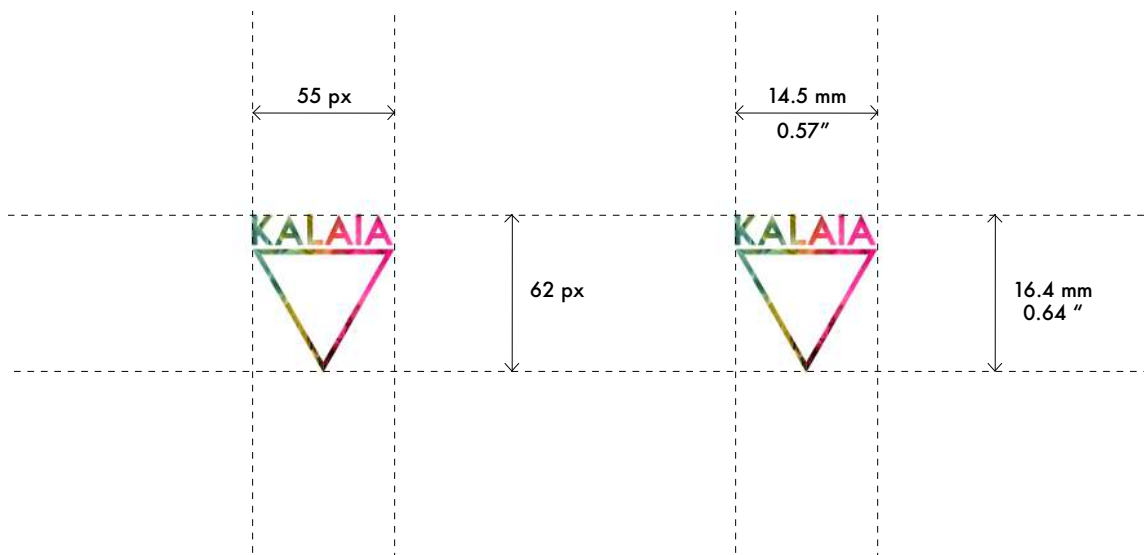


Figure 47 – Logo clear minimum size

1.2.10. COLOURED BACKGROUNDS



Figure 48 – Example of logo behaviour on coloured background.

1.2.11. PHOTOGRAPHIC BACKGROUNDS

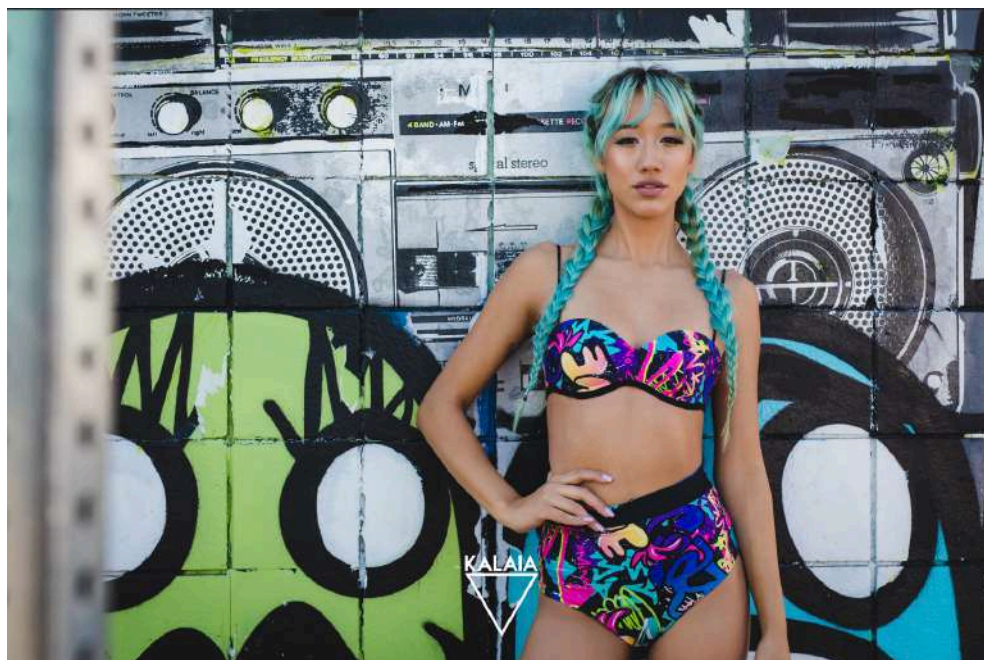


Figure 49 – Example of logo behaviour on photographic background. *Reverse it* collection



Figure 50 – Example of logo behaviour on photographic background. *The never ending story* collection

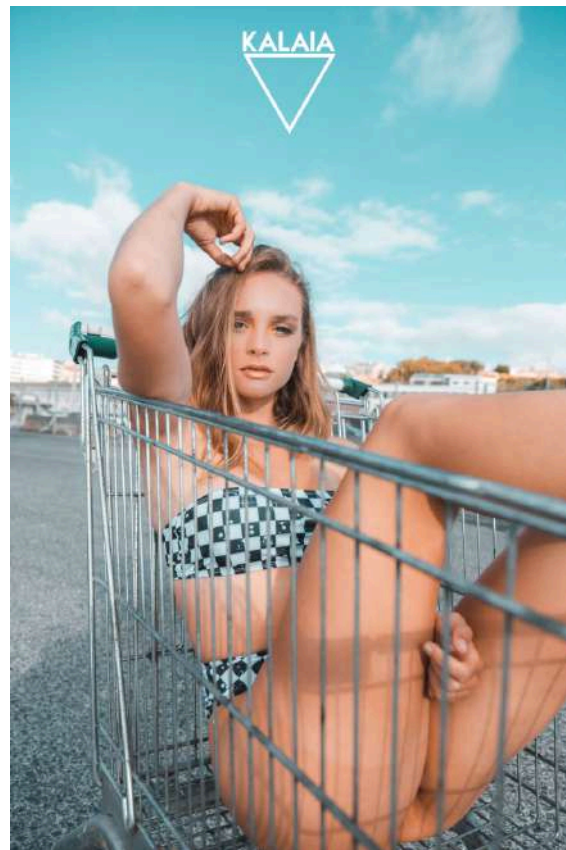


Figure 51 – Example of logo behaviour on photographic background. *Ecliptic* collection

1.2.12. TYPEFACE

FUTURA medium

abcdefghijklmnopqrstuvwxyz

ABCDEFGHIJKLMNOPQRSTUVWXYZ

0123456789!#\$%&()*+/?@=

FUTURA bold

abcdefghijklmnopqrstuvwxyz

ABCDEFGHIJKLMNOPQRSTUVWXYZ

0123456789!#\$%&()*+/?@=

FUTURA italic

abcdefghijklmnopqrstuvwxyz

ABCDEFGHIJKLMNOPQRSTUVWXYZ

0123456789!#\$%&()+/?@=*

**WHO SAID SWIMWEAR WAS
MADE FOR SWIMMING? OR
BEACHWEAR MADE FOR
BEACHES? **BREAK THE MOLD.**
BE BOLD. TAKE THE JUMP. LET
THE GLITTER FALL.
BECAUSE WE DARE. WE WIN.
WHAT'S NEXT?**

WWW.KALAIASWIMWEAR.COM

Figure 52 - Implementation of the futura font on stickers



Figure 53 - Implementation of the futura font on digital content

1.2.13. IMAGERY

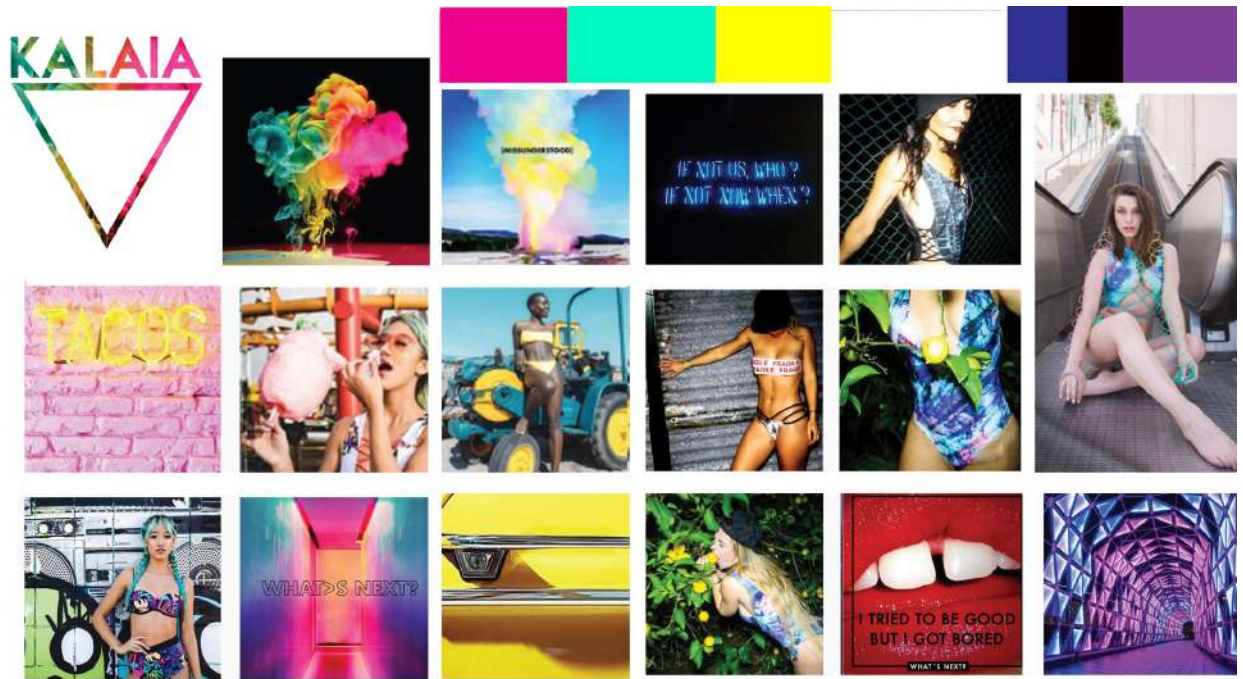


Figure 54 – Imagery of Kalaia Swimwear

NAME – The brand name KALAIA is a hawaiian interpretation of leaving your own mark in the world.

LOGO – The logo is very geometric, both in the typography chosen and the symbol. The triangle represents women, along with its vibrant colours showcasing youth, summer and confidence.

TYPOGRAPHY – As seen in figure 52, the typography used is sans-serif, geometric and legible. A variety of the same family is used on most communication and digital content.

COLOURS – The main colours are pink and blue. Secondary colours, purples and warm yellows can be seen both on the garments as well as on the written and visual communication. These represent summer, youth and festivities.

IMAGERY – The imagery is placed in out of the ordinary urban settings, away from the expected beach scenarios. The women represented use colourful accessories and backgrounds as seen in figure 54. The backgrounds of the lookbook photographs, on the other hand, are very simple and plain, giving emphasis to the products.

BRAND VOICE / SOUND – The sounds heard in the campaigns are electronic trap music with high beats.

2. BRAND LANGUAGE APPLICATIONS

2.1. WEBSITE

A website was developed, with an online store allowing a direct acquisition of products of the brand. The website is *mobile responsive*, meaning it adapts to the size of the smart device you may be using, as can be seen on figure 55. The website is directly connected to the Instagram page, this way all content does not need manual uploading. As for the backoffice of the website it's SEO Optimized (Search Engine Optimization). Optimized, allowing for people searching the web to have better possibilities on finding kalaia's webpages. Since the use of credit cards was necessary, the implementation of SSL (Small Lymphocytic Lymphoma) certification was fundamental being a security tool for the use of credit cards on the website.

Link: <http://kalaiaswimwear.com/>

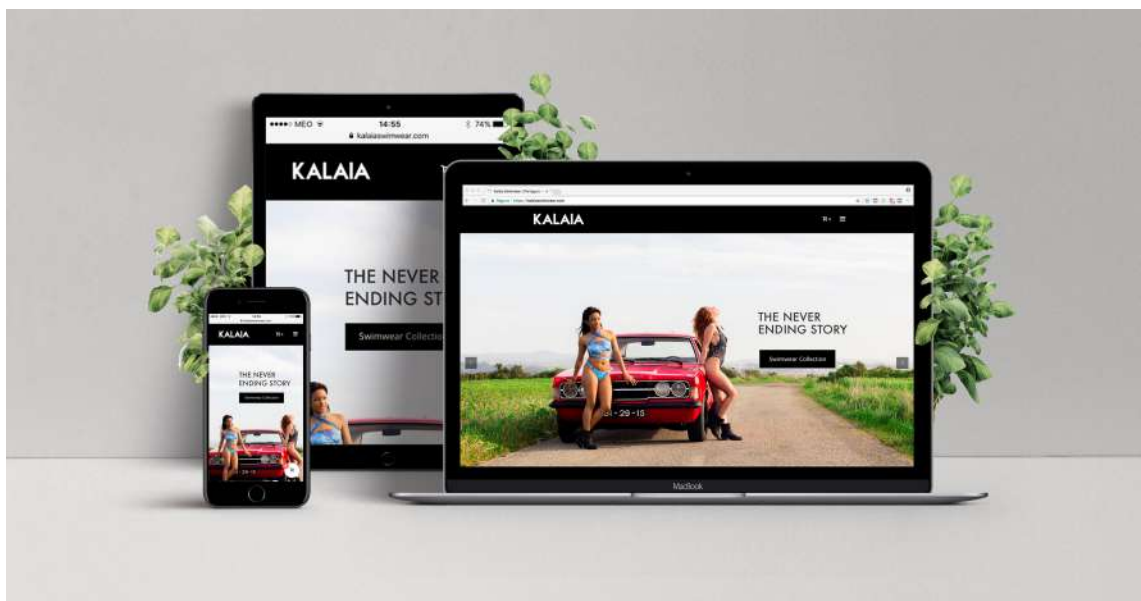


Figure 55 – Website home page on different smart devices.

2.2. SOCIAL MEDIA

Regular posts have been placed on social media platforms such as Instagram and Facebook. The themes around these posts were centered around the values of the brand, to establish Kalaia's positioning from competitors. Story telling is a key point to the captions of these posts, creating an intriguing and involving story around the characters showcased in the posts. Most posts as mentioned previously, showcase urban and irreverent scenarios, unexpected for a swimwear brand. Since the irreverent approach is definitely a core value of the brand, we chose the find new scenarios and new ways of communicating than the norm.



Figure 56 – Example of Kalaia's page on facebook

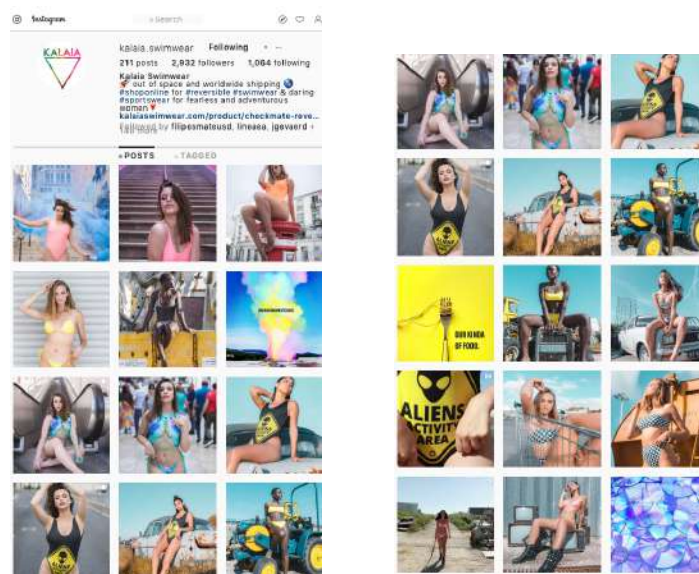


Figure 57 – Example of Kalaia's page on Instagram

Also, a few products were promoted through influencers and bloggers who were given a few swimsuits in exchange of posting and tagging the brand through their social media. This helped the notoriety nationally and globally.



Figure 58 - Marta Melro⁸ posts on Instagram wearing the spicy honey swimsuit



Figure 59 – Catarina Morazzo⁹ e Ni Oliveira¹⁰ posts wearing risky lollipop and salty sugar swimsuits

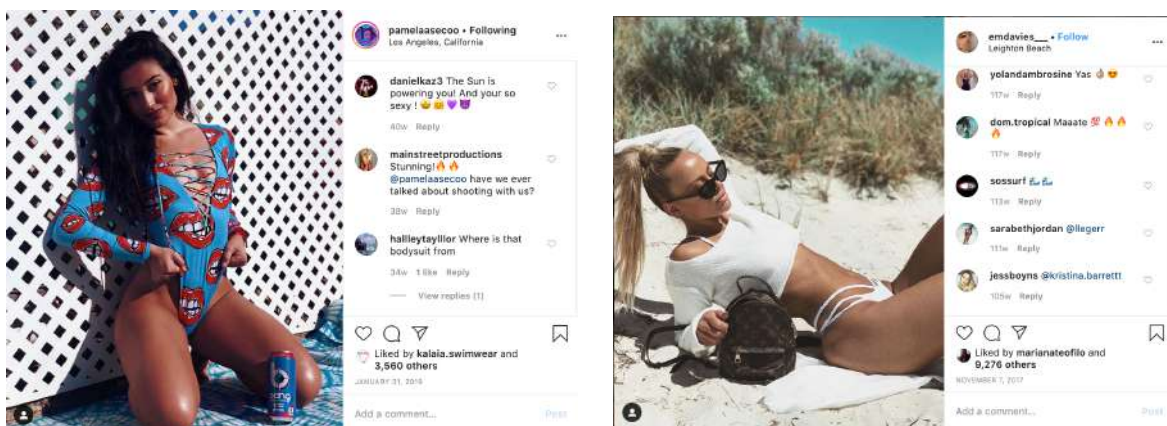


Figure 60 – Pamela Secco¹¹ and Emily Davies¹² posts wearing daring lips and risky lollipop swimsuits

⁸ Marta Melro is a Portuguese influencer with 350 K followers on Instagram.

⁹ Catarina Morazzo is a Portuguese influencer with 29.5K followers

¹⁰ Ni Oliveira is a Portuguese influencer with 59.5 K followers

¹¹ Pamela Secco is an American influencer with 55.9K followers

¹² Emily Davies is an Australian influencer with 299K followers

2.3. STATIONARY



Figure 61 – Business cards and labels on the garments



Figure 62 – Packaging of Kalaia's swimwear

2.4. BRAND LANGUAGE SPECIAL APPLICATION

2.4.1. AR CAMPAIGN CONCEPT - THE WINDOWLESS MOVING SHOP

The concept chosen for the augmented reality campaign comes from the understanding of *Reality* - moving through space and time - with the objective of being an irreverent brand and differentiating itself from other brands. With this exact train of thought, the concept is to transform a van into a moving store, which by itself is different than most fashion stores in the world. However, a van ironically has no proper display window making it a windowless shop; this is where the augmented reality comes into play making it possible, through this emerging technology, for viewers to see what lives inside the van; to see the store and the products available for purchase, the customer can physically enter the van or by digitally purchasing merchandise through their smartphone application. The fact that it's a windowless store, gives viewers, from the outside, a heightened curiosity, making them want to find out what really belongs inside this vehicle. Also, it's a smart way to utilize three sides of the van to create, not only brand awareness but having users interact with them.

The experience that one can have, while stuck in traffic or by walking by the vehicle, creates a memorable experience and generates buzz around the brand. I find it interesting how one can connect such extremes: a vehicle that has been around for decades before the invention of technology, with such recent and emerging technologies. This is where the magic of technology comes into play not distorting what reality is but simply allowing to show the inside and out of an object that previously could not have been possible, augmenting its reality.

2.4.2. GOALS

The goals for this augmented reality project are a fundamental beginning for the development of this campaign. Since technology is a value incorporated in the brand's DNA, it's important to develop a project that would translate into reality, an augmented one.

One of the main goals, is the interactive experience for the user, one that will be memorable. This will translate in creating buzz in the industry for its innovation and creativity. As seen in the case studies in chapter II, some brands use marker-based system where other used markerless systems; some brands like Nike searched for functionality whereas Nixi Killick's brand seeks for entertainment through its dynamic visuals. With this part of the project, I envision to combine the best assets these brands have used in their AR campaigns. I project to have animated visuals by bringing patterns to life as well as adding functionality with the possibility to shop directly from the platform as seen through Zara campaign.

After researching emerging technologies, specifically AR, I understand that one does not need to choose one system over another (marker-based or markerless). Therefore, for the benefit of the user experience, I intend to use both systems that will translate into previously seen goals such as memorability and creating buzz. Lastly, the data is an important aspect of this project, allowing the brand to collect valuable information regarding its users and possible clients.

Table 2

Goals to achieve with the development of the AR application

Marker-based	Markerless	Dynamic Visuals	Provide Service	Call to action to shop	Memorable	Create Buzz	Own application	User experience
X	X	X	X	X	X	X	x	x

Note. This table shows the different characteristics to be implemented for the Kalaia AR application.

2.4.3. PROJECT DESCRIPTION

According to Williams and Chiannetta (2016), augmented reality is an enhanced version of reality with views of physical real-world environments.

The augmented reality experience begins by installing the *Kalaia AR* application on a smart phone; once the application is downloaded, the AR begins from a marker-based trigger seen on the outside of the van. Once the smartphone is placed in front of the van, the patterns will be animated on the splash screen of the application. While the animation on the splash screen is happening, the user can visualize a button *See what's inside*, which awakens the user's curiosity. When the button is clicked, there is an markerless augmented reality experience that happens:

2. The user is able to see inside the van in a 3D model, which they come to realize for the first time is a swimwear shop.
3. Then the animation, allows the user to navigate inside the van through hand movements on their smartphone.
4. The user is then able to shop throughout the van.

Once the user is in the application's shop menu, there are three other menu buttons, enhancing their experience:

1. Favorites – when navigating through the van, the user is able to save their most liked items to have a closer look once they've finished shopping.
2. Location – the user is able to see the map and locations of where the van has been until reaching its actual location. There is also the option of realizing a quiz *Guess where we'll go next?* The quiz shows different location options allowing the user to win discounts on their next purchase whether physically in the van or through the application.
3. Videos – these are promotional videos showing users how swimsuits fit on the models from different angles.

When navigating in any of the different sub-menus, the user always has the option of returning to the splash screen, with the dynamic animation.

2.4.4. KALAIA AR BRAND LANGUAGE

When analysing the case studies of the AR applications, I was able to conclude that the visual language was according to each brand's DNA. While creating the *Kalaia AR* application, this aspect was thoroughly taken into consideration. The pattern that is animated through the splash screen relates to the patterns used on the garments themselves. This pattern can statically be seen on the outside of the van as well as animated through the application. Both these components were created with reference to the brand's language elements seen below:

NAME – Considering that augmented reality is still a considerably new technology, the words *AUGMENTED REALITY* must be visible in order for people to understand the purpose of the application. Therefore, the application's name is straightforward *Kalaia AR – augmented reality*.

LOGO – The logo remains very similar to Kalaia's logo. I added the + icon, as well as the words *augmented reality*. The colours are black and pink, giving somewhat of a hint of the target audience. The logo had to remain with contrasting colours for the functionality of the marker-based trigger.

TYPEFACE – The typeface remains the same as other supports, being futura bold and medium maintaining its coherence.

COLOURS – As seen in the colours of the logo, the colours seen on the pattern of the van are the same ones seen on the garments: vivid and saturated. The pattern is festive, abstract and psychedelic which resonates with a youthful and trendy public. The predominant colours are pink, yellow and blue.

As for the colours on the menu bar, they are pink and blue which are the same colours used on the website having a consistency throughout the different platforms.

IMAGERY – The imagery chosen for the application, utilize the same colours as the website, pink and blue. The menu design is made of pictograms, with the intention of being straightforward. The digital renders of the interior of the van are the applications' main imagery, showing the most accurate version of reality. In order to highlight the AR experience, there are not too many submenus.

BRAND VOICE / SOUND – The sound is the same genera found in the videos produced for Kalaia advertisements, electronic trap music high beats.

2.4.5. INTERACTIVITY

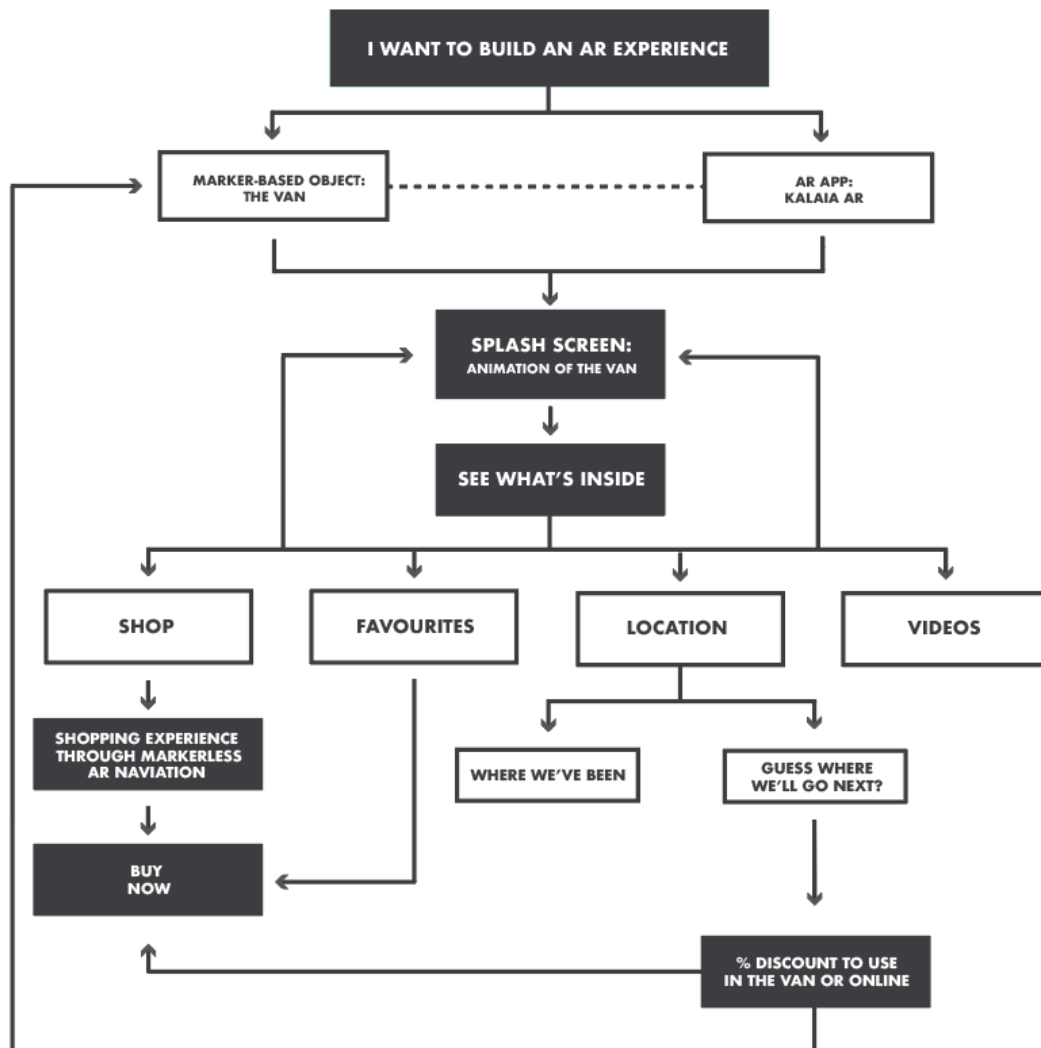


Figure 63 – Flowchart of the Kalaia AR application

The interactive process is the particular beauty of augmented reality; it creates a user experience that differs from standard platforms. There are two defining AR interactive points through this project:

1. Once the user looks at the van and notices the “augmented reality”, downloads the application Kalaia AR, directing the user to point the smartphone to the maker-based van. Once directed, the pattern seen on the van is animated through visuals and sounds. At this stage, the transition begins with the second interactivity measure, this one being led by a suggestive button showcasing “See what’s inside”.
2. When clicked, the user has the sensation of being inside the van it’s pointing to. At this stage, the user is able to navigate inside the van, looking at the shop. The products displayed are swimsuits and bikinis; the user is able to look through them, pull them out for more information regarding pricing, sizes and available colours. There are possibilities of saving them as favorites and buying them through the application.

The function described above are standardized menu buttons like any other application, such as the location sub-menu, and videos explained above.

2.4.6. TECHNOLOGY

As seen above by Kiu et al. (2018) there are two types of AR which are maker-based AR and markerless AR. In this project we intend to use both of these technologies.

1. The marker-based AR uses camera and visual markers when the reader triggers the marker. The markers are images that can be detected by a camera while using software placed in front of a scenario. Most of these markers are black and white or colours as long as the colours have enough contrast between them. For this project in particular, the marker is black and white and seen in figure 64 and the scenario is placed on the surfaces of the van (figure 65).
2. The markerless AR technology, as mentioned by Katiyar (2015), is more interactive than the marker based one. There are many ways in which the markerless technology can work; the image displayed can be gathered using GPS which means it doesn’t require a marker to display the content.

3. It can also be triggered with sensors, which won't be the intent of this project. For the benefit of this project, location based technology is the one that makes the most sense considering the display shown through the application must coincide with the location and movements of the user; allowing them to shop "inside" the van.

Below, is a visual exploration how marker-based and markerless technology can be applied in the near future of AR development.

2.5. KALAIA AR PROJECT EXECUTION

2.5.1. MARKER BASED TRIGGER SYSTEM



Figure 64 – Kalaia AR logo



Figure 65 – Van with the marker-based trigger



Figure 66 – Smart phone triggering marker



Figure 67 – Marker based triggering animation



Figure 68 – Transition to marker-based system to markerless

2.5.2. KALAIA AR MARKERLESS SYSTEM

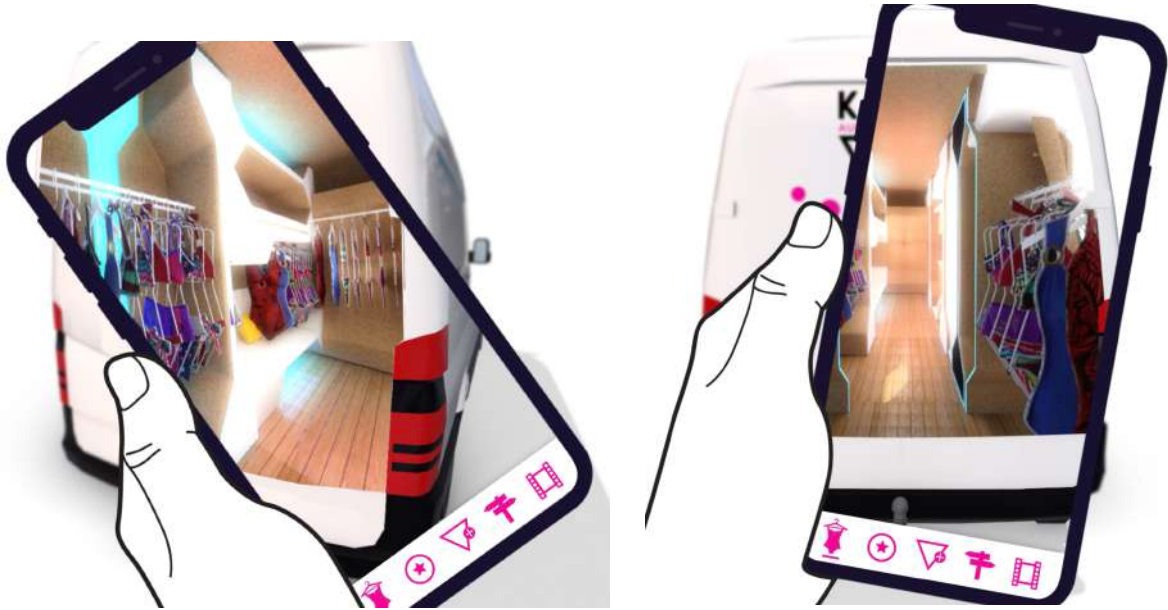


Figure 69 – Examples of the markerless 3D model

2.5.3. KALAIA AR APPLICATION



Figure 70 – Back splash of the application

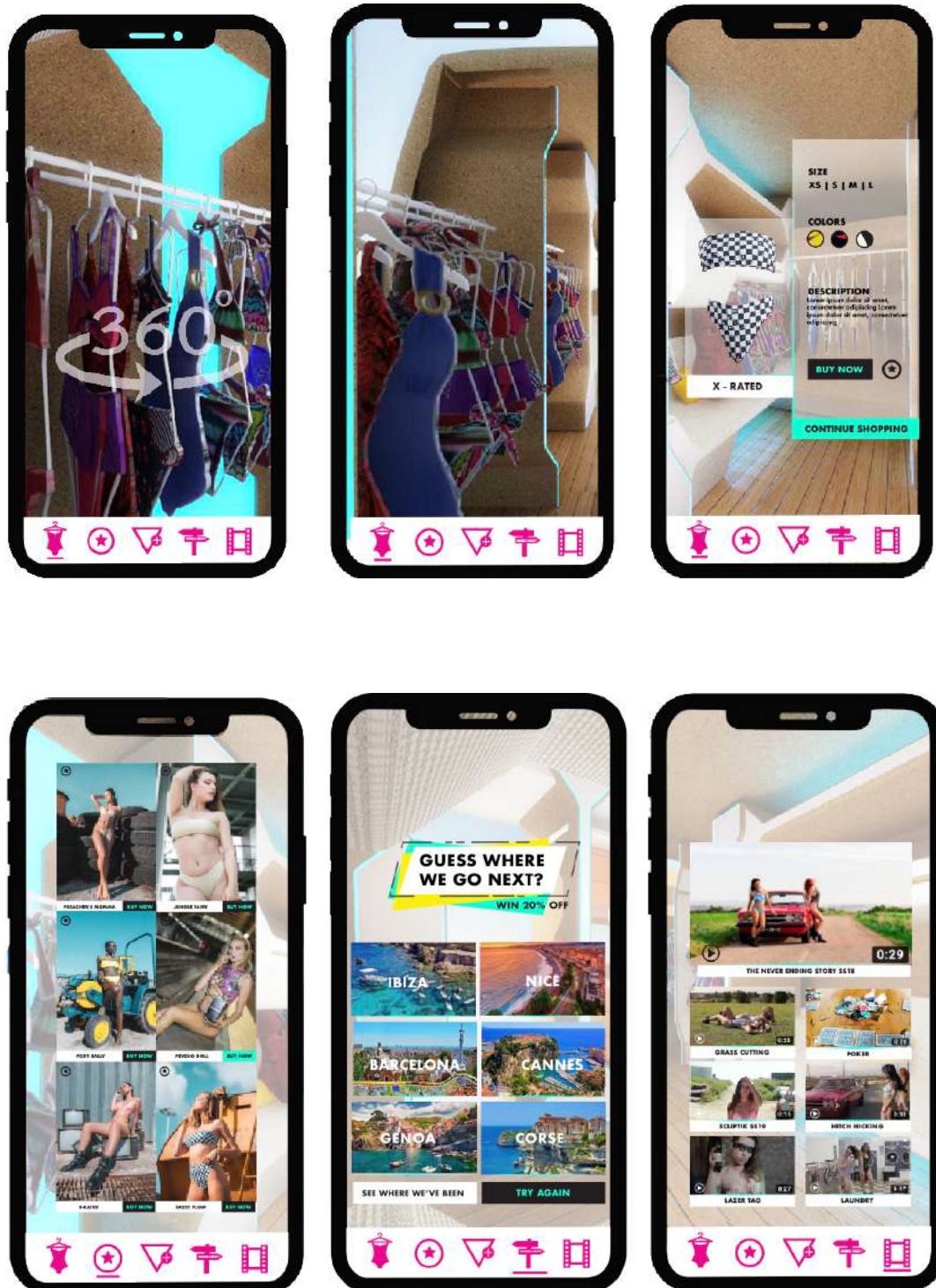


Figure 71 – Examples of the navigational menu

V – CONCLUSION

The objective of my research was the simulation and development of a fashion brand using the competences gained from my undergraduate and graduate studies. After evaluating the Portuguese market, I noticed a higher volume in sales, exports and potential in the textile industry. Considering the demand, I chose to create and build a swimwear brand registered as Kalaia. The creation of the brand language including the name, the logo, the choice of colours, the tagline, the imagery, to the brand sound is a process that requires branding and design knowledge. In order to have one's values and mission represented with the correct intent, one must understand each of the creative and branding processes such as the meaning of the colour blue or how to portray a model looking straight into the camera. All these aspects that often go unnoticed to the customers have a much deeper and subconscious impact than they realize. These elements connect people's emotions and decisions; for this reason, brands follow a similar train of thought and creation. I have not only studied and researched these elements, but have implemented them as well.

While developing my thesis, I was introduced to emerging technologies which I believe will be crucial in advertisement in a very near future; considering the technology exists and the devices as well, it's just a matter of fine tuning. The AR project I developed is definitely a project I would like to implement when the means exist; I see the potential due to its interactivity, novelty, and data collection. The development of an application with the marker-based and markerless technology would require funds that are not available at the moment. However, the AR application may not exist but the van does and will be on the road summer of 2020, always with the objective of finding irreverent ways of creating awareness, advertisement and sales.

However, I have learned a lot more than branding, advertisement, design and merging technologies with the creation of this project and of the Kalaia brand; some of it cannot be researched or studied from textbooks. I stepped out of my comfort zone in so many different ways possible, such as dealing with manufacturers, deadlines, photoshoots, accounting, television appearances, travelling, market sales, and so much more.

The creation of a brand, may be done individually but to build a brand up, it must be done with a team of people. None of this project would have been accomplished without the help of my friends, my family or any of those who supported and believed in my project. This being said, with the highs come the lows, and considering such a competitive market, both in the fashion and the digital industry, there were unavoidable challenges: advertisement cost, general costs, national production and most importantly to generate sales.

It's been a memorable journey through highs and lows, struggles and successes. With this, I can conclude that the theory of any brand creation, may come from books and text references, exposed in APA norms but those alone can't guarantee its success. I still have a long path ahead filled with awareness and insights, mistakes and accomplishments to be conquered.

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